



## TAXIS RESOURCE SYSTEMS

*Sustainable Business Solutions for Environment, Energy & Development*

*TRIS is a wholly owned business unit of Taxis Group, LLC*

### Technology and Business Model Summary

***“Collaborative Solutions - Creating Assets from Environmental Liabilities and Process Inefficiencies”***

#### **Who we are:**

**Taxis Resource Systems (TRS)** offers sustainable business solutions that address environmental, resource management, and process efficiency risks and opportunities. We are a technology integrator for Carew Energy and Water, Inc. (CEW), developer of unique fluids separation systems which provide solutions to environmental challenges, eliminate environmental liabilities and process inefficiencies for our clients and partners, and provide sound business opportunities for converting liabilities into assets.

The core, technology offering includes proprietary fluids separation systems which outperform conventional filtration technologies, in a small footprint, and at reduced capital and operating cost. The core separations system is readily coupled with available third party ( or emerging Carew) gasification – catalytic condensation /bio-fuel systems which produce clean water, energy and optional biofuels. Third party gasification systems are currently available and Carew flash pyrolysis / biofuel production systems are due to come on line in the near to mid term.

#### **The Time is Right for a New, Solution-Based Approach - Our Distinctive Value**

Over the past several decades, enormous investment in traditional approaches and end-of-pipe solutions to environmental management and control have fallen short in providing viable financial/technical strategies which yield acceptable results for corporations, municipalities, government agencies, and property/asset owners. The majority of money spent to date has gone to maintaining *traditional environmental risk management technologies*, rather than the advancement of innovative solutions to environmental risk and the accompanying financial risks/liabilities.

New and innovative technology-driven (and often regulation driven) methods of risk management and optimization of resources are long overdue. At TRS we believe that by eliminating the roadblocks that retard the advance and application of technology, we can drive a **technology-centered mindset**, that will produce greatly improved waste processing and energy/resource recovery efficiencies with a corresponding risk reduction – while improving the financial position of our clients.

#### **Our Technology Approach**

TRS represents, obtains, develops, and markets innovative but **proven** environmental technology elements and systems, combining them to serve our clients’ waste management needs and improve energy “footprint” efficiencies. Our technology offerings developed at CEW alone and in tandem with other technology partners in the value chain provide superior performance and value compared to competitive options.

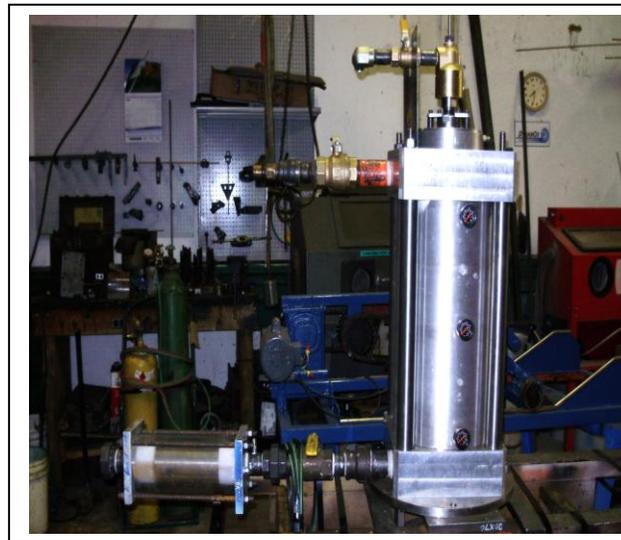
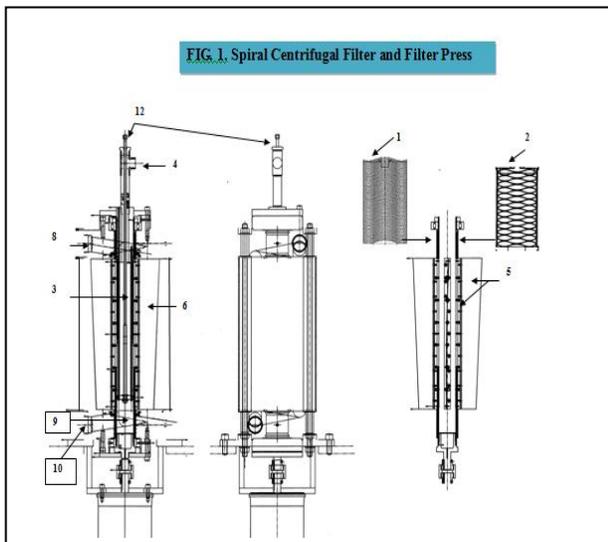
## Addressable Technology Application Areas

- Wastewater / Storm water Treatment
- Bio-Solids Recovery / Marketable Products
- Mine / Process Stream Separations
- Process Stream Gasification
- Energy Recovery
- Solid Waste / Bio-waste Processing
- Energy / Biofuel Production
- WWTP Process Efficiency Improvement
- Reduced Environmental Liability Exposure
- Solid Waste to Landfill Volume Reduction
- Process and Drinking Water Production from Waste Water Beneficiation
- Chemical / Pharmaceutical Process Industries
- Asset Owner / Operator Risk Minimization

## Basic Description of Filtration Technology

Carew Energy & Water, Inc (CEW) possesses patent rights, and has field installed for agricultural concentrated feedlot applications, a self-cleaning filter/separation system in which the core filtration device apertures (pore sizes or filtration free spaces) can be electronically or pneumatically adjusted from a coarse range to microporous sizes and below. Combined with proprietary polymer fluidized bed processing, our separation systems can remove a wide spectrum of dissolved constituents, whether contaminants or target product chemicals.

For a typical waste to energy and fresh water application, the variable aperture/self-cleaning filter is modified to both filter water and dewater liquid waste sludge, such that the extracted solids have a high fuel value. The recovered, high BTU solids can be processed alone or blended with municipal, industrial or biowaste from land clearing operations and fed into a gasifier for electric power generation. The patented Carew “wave-coil centrifugal filter and filter press (WCF) system feeds its dried waste-derived solids into a gasifier, which converts the carbon based solids to a hot gas which drives an electric generator set. As a result BTU-containing residue conserves the contained energy in waste solids; converting it to electric power, while simultaneously purifying the waste waters processed by this system.



Of considerable long term importance is the fact that the technology can be modified such that controlled extraction and condensation of the hydrocarbon gas stream into synthetic/biofuels for stationary or transportation markets is achieved.

The WCF system micro-clarifies human, agricultural/animal, industrial waste water, and chemical process streams through a hybrid centrifuge-filter; the filtered solids are dried under pressure, heat and vacuum. Soluble chemicals and bio-waste, which still remain in the clarified filtrate are concentrated to a high solids slurry with an integrated self cleaning ion exchange/chelation reactor and subsequently refiltered to separate the resulting solids. The column-derived slurry of water-borne contaminants is combined with the filtered solids. Thereafter, both soluble and suspended solid fractions are dried together. The filtrate is the water fraction which may be further purified for human or animal consumption or discharge to the environment.

### **Our Business Model**

*“Taxis Resource Systems creates value by providing technology systems for our clients in an historically fragmented and inefficient marketplace. “*

• TRS Systems:

– **Develop and Aggregate Environmental Technologies;**

– **Effectively packages, value prices and markets** these technologies to clients and partners within our well qualified client/prospect network;

*AND of most importance,*

– **Reduce costs, mitigate liabilities and create new/incremental revenue streams for our clients**

Our management approach, built on a “**nodal**” concept which allows a flexible, yet integrated, platform from which to drive business success. A lean corporate staff enables the formulation of highly focused business units / subsidiaries that allow for alignment of rewards for investors, partners and staff on a project, technology, or industry basis.

### **Management/Advisory Board**

David Hanson, Taxis Group, LLC Owner/ Principal

Dave Hanson brings over 35 years of experience in environmental management, academic and industrial research & development, regulatory and program administration, quality management and program funding - to diverse functional areas including: technology development and application; product and market development, project, financial, risk, and management and client advocacy before regulatory agencies on a local or national basis. Of equal importance is his knowledge of the issues facing businesses with environmental exposures - and their desire for cost effective, value added solutions to their environmental risks, process and accompanying financial inefficiencies.

Mr. Hanson has earned degrees from Michigan Technological University in Biological Sciences and an MSc in Environmental Chemistry with a research focus on the effects of anthropogenic chemical inputs on forest ecosystem chemical dynamics. He received a US Patent for development of processes for the recovery of inorganic reinforcements and chemicals from post-industrial reinforced engineering polymer composite scrap materials. His research and development experience includes basic academic research and applied industrial R&D. He also served as a resource specialist for the Michigan Department of Natural Resources, Air Quality Division specializing in industrial chemical facilities and hazardous waste operations.

Gary Hindall / Advisor: Business Development, Sales and Marketing

Mr. Hindall has provided leadership and direction for growth of independent firms and operating divisions of international corporations; introducing new technologies to the North American automotive manufacturers and tier one suppliers for over 35 years. He has served as business development manager for firms such as TRS Tech\_Biz Summary ver. 081612 Privileged and Confidential Business Information

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Ingersoll-Rand, BEHR Robotics, BASF, Pontiac Motors, and Flakt AB presently (ABB Automation), a Swedish manufacturer of automotive paint systems where he launched their US operations and developed the business to \$50MM in 5 years.

Mr. Hindall graduated from the University of Findlay (OH) with a BS in mathematics with physics and chemistry minor. He also completed course work at the International School of Business in Stockholm Sweden.

#### Dr. Alex Jittu – Advisor/ Engineering Services

Dr. Jittu has practiced as a professional engineer for over twenty-eight years of in manufacturing, international sales & marketing, product development management, domestic and international project management and executive management experience. He has implemented lean manufacturing and “just in time” processes for automotive companies such as Toyota, Nissan Ford and Chrysler. His work in electrostatics in automotive paint operations has him in demand through out the world.

Dr Jittu has developed various water and wastewater treatment products using ozone and UV principles and holds several patents for his work. He was responsible for the diversification of an optical character recognition, OCR engineering/manufacturing company with development work ranging from the automotive industry to, solar and wind energy-based products, water and waste water treatment controls, SCADA systems for utility management and has designed water disinfection systems based on Ozone for potable and waste water treatment applications.

Dr. Jittu received both of his advanced degrees from the Technical University in Cluj Napoca, Romania. He has an earned PhD and MS in Electrical Engineering. His doctoral dissertation was “The Optimization of Electrostatic Paint Applications”.

#### Additional Management Team / Advisory Board Members – resumes available upon request

Paul Morris – Acting Chief Financial Office BS, MBA Dartmouth University

Mr. Gary K. Boussie – General Manager – Project Delivery, BS Oakland University

#### Technology Partners

Carew Energy & Water, Inc., Milford, MI & Naples, FL

Quantum Compliance Systems – Ypsilanti, MI

Dunbar Engineering, Inc. – Tulsa, OK

#### IP Owner - Dr. E. Bayne Carew, Principal and Owner, Carew Energy & Water, Inc.

Carew Energy & Water (Carew Holdings, LLC.) is the developer of the filtration technologies offered by Carew Filtration Systems ( or CEW), and soon to be launched flash pyrolysis/bio-oil recovery technologies. He serves as director of CEW intellectual property and steers our technology development arm. Carew holds several patents – issued and pending, covering innovative filtration technologies, flash pyrolysis, bio-fuel production and fuel cell technologies. Until his retirement from the faculty of the University of Michigan, he directed the U.S. Navy’s Technology Transfer Center. He has co-owned and operated Waste Reduction Systems in Dearborn, MI, and Virogen in Ann Arbor, Michigan during the late 1980s through the mid 1990s. Since that time he has been actively engaged in the design and development of self-cleaning Carew filters for use in industrial, POTW, military and other commercial markets.

#### **How We Generate Revenue?**

The TRS management team will apply their significant management and networking experience to identify and qualify clients for our systems, assess client liability exposure and transform processes which traditionally drain

cash to breakeven or profitable operations. By capitalizing on an ability to acquire *profile projects in targeted sectors* with significant impact and growth potential and bring our break-through technologies and systems into play, where significant profit potential can be realized.

Recurring revenue streams, through our scalable technology solutions, will come from the following sources:

1. Value-added remarketing fees for captive technologies (initially filtration technology and ultimately gasification and biofuel, waste to energy and fuel-cell systems)
2. Sale of recovered products (fertilizers, energy production, biofuels, etc.) from process applications integration
3. Implementation support fees – contract field services/ maintenance fees on installations
4. “Carried interest” / success fees on savings on select sites
5. Sale of Taxis Resource Systems’ and TRS Partner-developed technologies
6. Marketing fees charged to select technology partners

### **Target Applications**

Our initial showcase applications include municipal waste water treatment and agricultural/concentrated feed lot operations with mining wastewaters to follow in the near future.

We are currently seeking technology partners and seed round investment for the installations in each of the target applications.

### **Contact Information**

Please contact David Hanson for more information about investment opportunities, or how our systems integration approach to environmental liabilities and process inefficiencies can help your operation

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