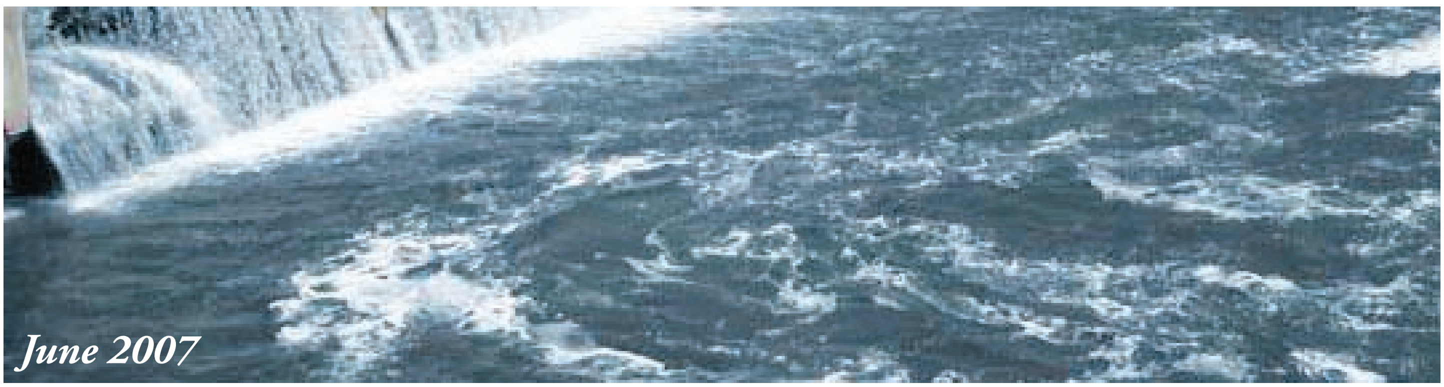


HydroPower Technology Analysis

Patent Analysis Report

Analysis of United States Patents and Published Applications by Broadly Defined HydroPower Market Segment

Contents

Hydro Power Market

Report Scope

This report sample was developed based on the premise that an analysis of the Hydro Power technology domain would ultimately result in an investment in hydro power related technologies or companies, or in the acquisition / divestiture of patent assets or operating companies within the sector.

The analysis starts with a broad Semantic search on the technology area, and follows a progression into more detailed information.

Methodology

Through the use of PatentCafe's Latent Semantic Analysis patent database, the As shown in the figure below (Fig. 1), this search identifies the core processes or systems within the broad scope of "hydro power". The process follows the logical process:

- Develop a broad search for technologies comprising Hydro Power. LSA search results identify non-obvious opportunities.
- Identify the various core processes, and conduct searches to identify sub-processes and component technologies.
- Perform an analysis on individual patents and patent clusters to identify those meeting investment / acquisition criteria.
- Perform an analysis on inventors & patent owners, correlating ownership with patent activity in various segments.
- Develop the appropriate investment or acquisition strategy for the patents, or company owning the patents.

The Semantic search engine analysis of patents as the Sub-process and Component level identify not only obvious patents and technologies within the narrowly-defined technology areas, but as well, technologies developed in non-obvious industry segments intended to accomplish the same or similar functionality as the inventions within the hydro power segment. These non-obvious

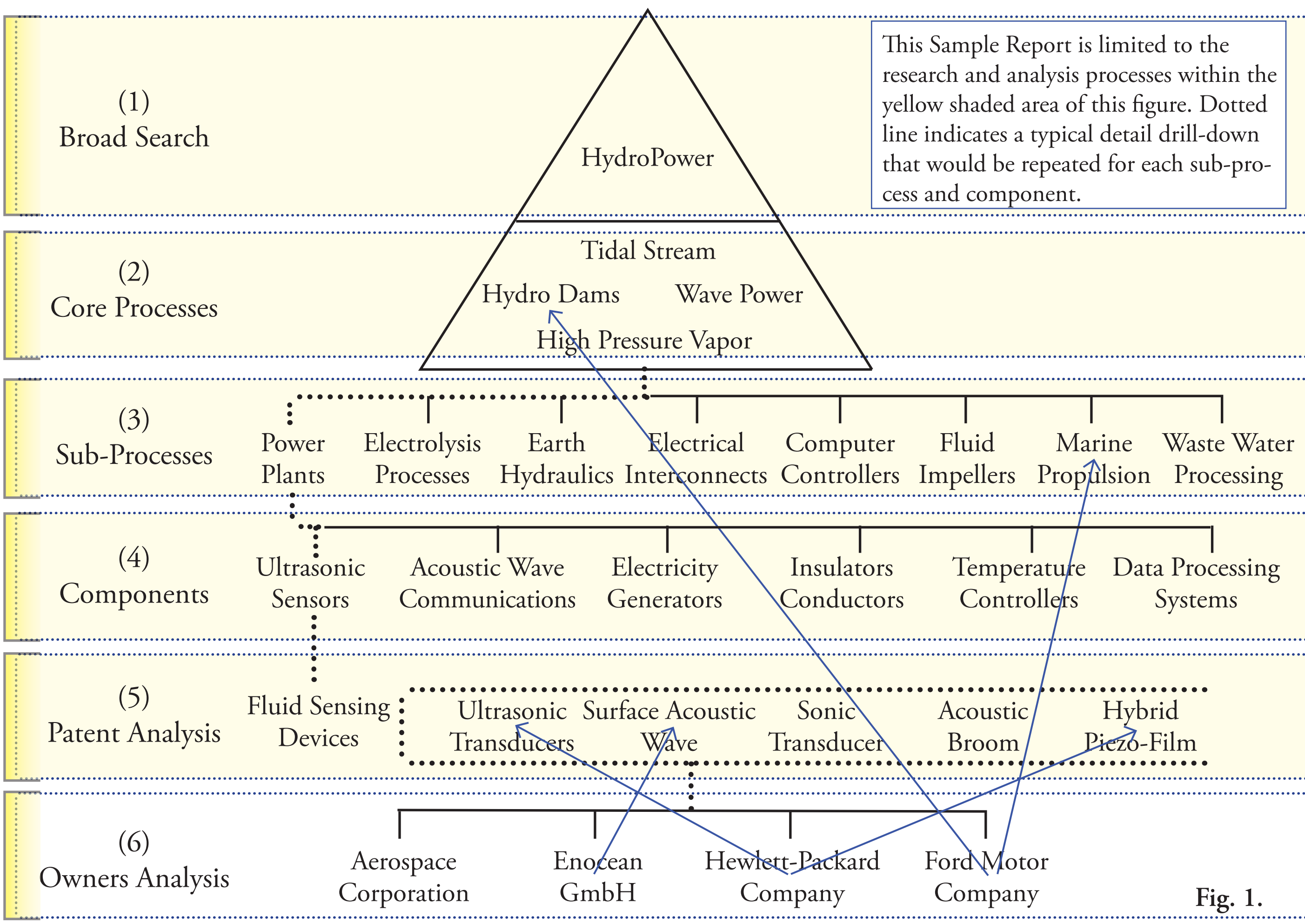


Fig. 1.

patents (sometimes referred to as “analogous art”, are a critical part of the analysis since they could provide less expensive market entry, infringement risk mitigation, or invalidate future patents.

Patent analysis would typically begin with the assembly of a collection of patents defining the technology focus - a “patent portfolio”. The portfolio is then analyzed using a variety of statistical methods to identify each patent’s relative strengths & weaknesses from a legal, commercial and technological perspective.

Finally, the analysis would focus on patent owners, identifying large owners (prospective licensors or acquirers), small companies (emerging technology companies, seminal / ground-breaking technologies), and the relationships between companies, patent ownership, and industries / processes to which the patents may be applied. A typical report would result in a list of conclusions, recommendations or observations.

Hydro Power

Broad Industry Description (Semantic Search Query): *"Hydropower is the capture of the energy of moving water for some useful purpose. "Hydro" includes Tidal Power systems: The trapped water turns turbines as it is released through the tidal barrage in either direction. In tidal stream power, the tidal stream generators draw energy from currents in much the same way that wind generators do. The higher density of water means that a single generator can provide significant power. This technology is at the early stages of development. Wave Power is the harnessing power from ocean surface wave motion, and might yield much more energy than tides."*

Obvious Major Components Used In The Hydro Power Industry

- Blades
- Controllers: over-speeding, responsive to wind speed
- Safety: environmental, animal life, humans
- Corrosion protection
- Cogeneration / Multi-fuel systems
- Liquid waste processing
- Turbine systems
- Energy conversion / Heat exchanging

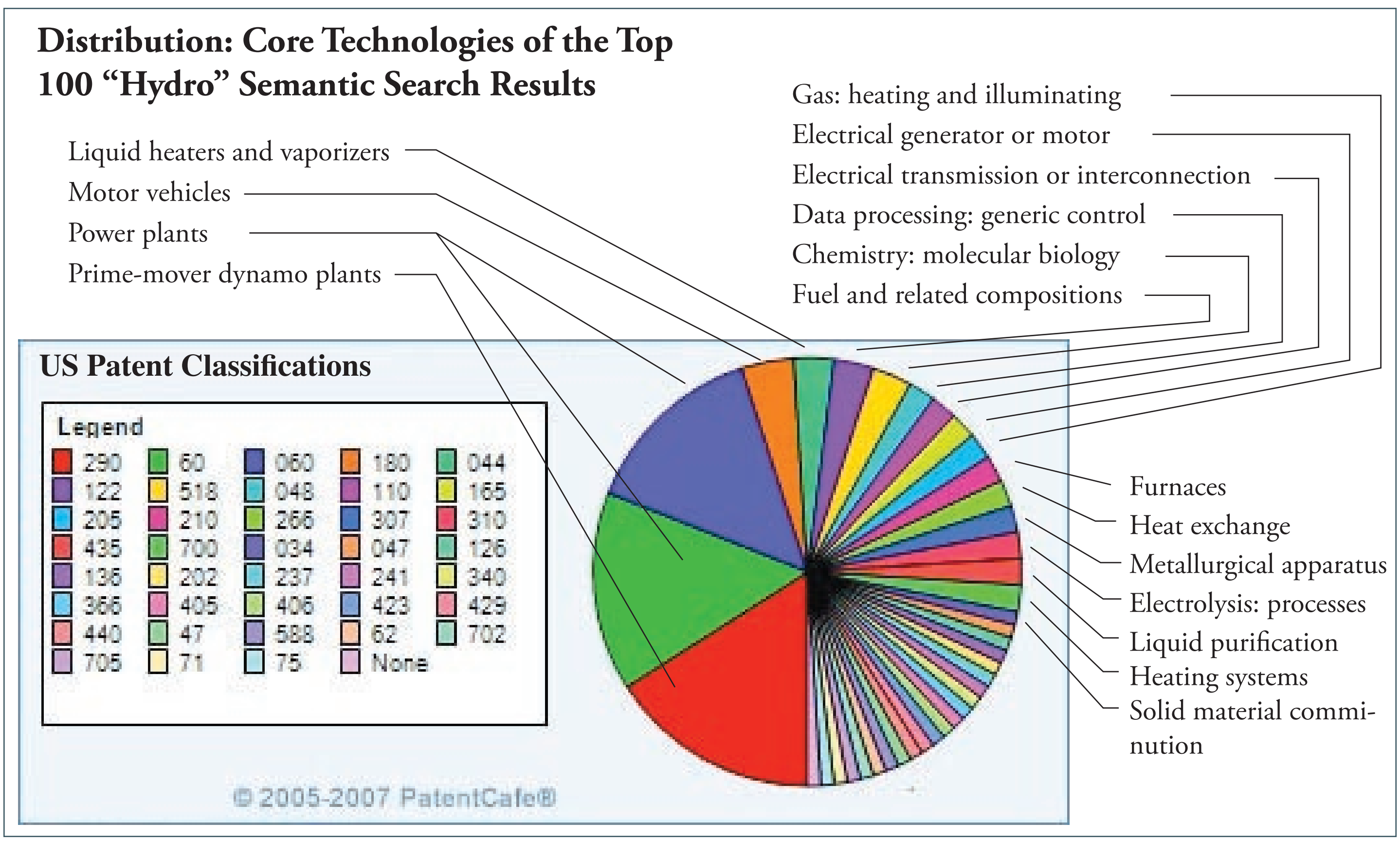
Patent Data

Latent Semantic Analysis using the search query above generated a relevancy-ranked list of patent search results. The first 100 most relevant patents were extracted for analysis. The key metrics investigated included:

- The list, and distribution of core technologies practiced in this industry.
- Patent filing trends that would indicate growth in R&D investment by the patent owners.
- The scope of the core technologies as defined by the total number of patents defining the technology domain(s).
- What other GreenTech markets these technologies were either developed for, or can be leveraged into.
- Who the top patent (and application) owners are for this market segment.
- A glimpse at the very latest US patent applications published in this market segment.

Deeper analysis of each technology area, major competitors and trends within each area, international patent filings, prolific inventors, and other metrics would deliver the required patent intelligence for investment or strategic planning decisions.

A comparison of patent applications from year-to-year would identify early new entrants into the HydroPower industry.



Latent Semantic Analysis - United States Patents & Applications

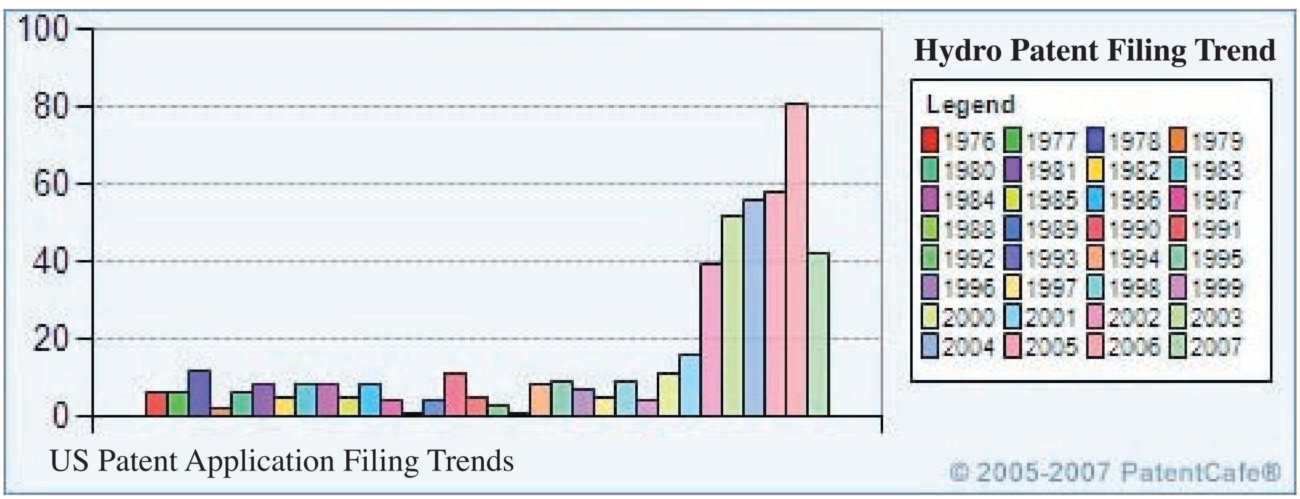
PatentCafe's LSA engine identified the operative keywords for each of the most relevant patents in the search result set. The "Semantic Terms" are typically used to search deeper, identifying specific technologies with more precision. Boolean search engines require the research to already know all possible search words - LSA identifies key words, even if used to obscure discovery.

The Semantic Terms also identify **new lexicon** - words invented by the inventor or patent attorney in the hopes of obfuscating discovery of their patents and applications using traditional Boolean keyword patent search engines. These new lexicon can then be used to data mine a broader, international patent database to identify other patents and applications filed by the same applicant.

Semantic Terms identified in priority patents listed in the Hydro Power search results (high co-occurence with Wind results):

electricity	*power*	*demand*	*efficient*
waste	*plant*	*generator*	*fuel*
supplied	*high*	*energy*	*consumption*
hydroelectric	*off-peak*	*steam*	*geothermal*
turbine-generator	*saving*	*surplus*	*battery*
alternating	*current*	*charger*	*inverter*
coal	*water*	*potable*	*pump*
heat	*turbines*	*pollutants*	*seawater*

Notice should be made to the keywords "battery" and "coal" above. While the search was to identify hydro turbine technology that could be mitigate environmental issues associated with hydroelectric generation, the Semantic engine also understood applicable technologies in batteries used in association with hydro plants, as well as alternate fuels used in conjunction with hydropower generation in cogeneration plants. This is one example of the scope of relevant technologies identifiable through LSA patent data analysis.



US Patent application filing trends have risen significantly since 2000. The "drop off" of applications from 2003 to present typically result from the 18 month secrecy period of new patent applications prior to being made public. All indication is that this technology area is, and for the immediate future will continue to rise.

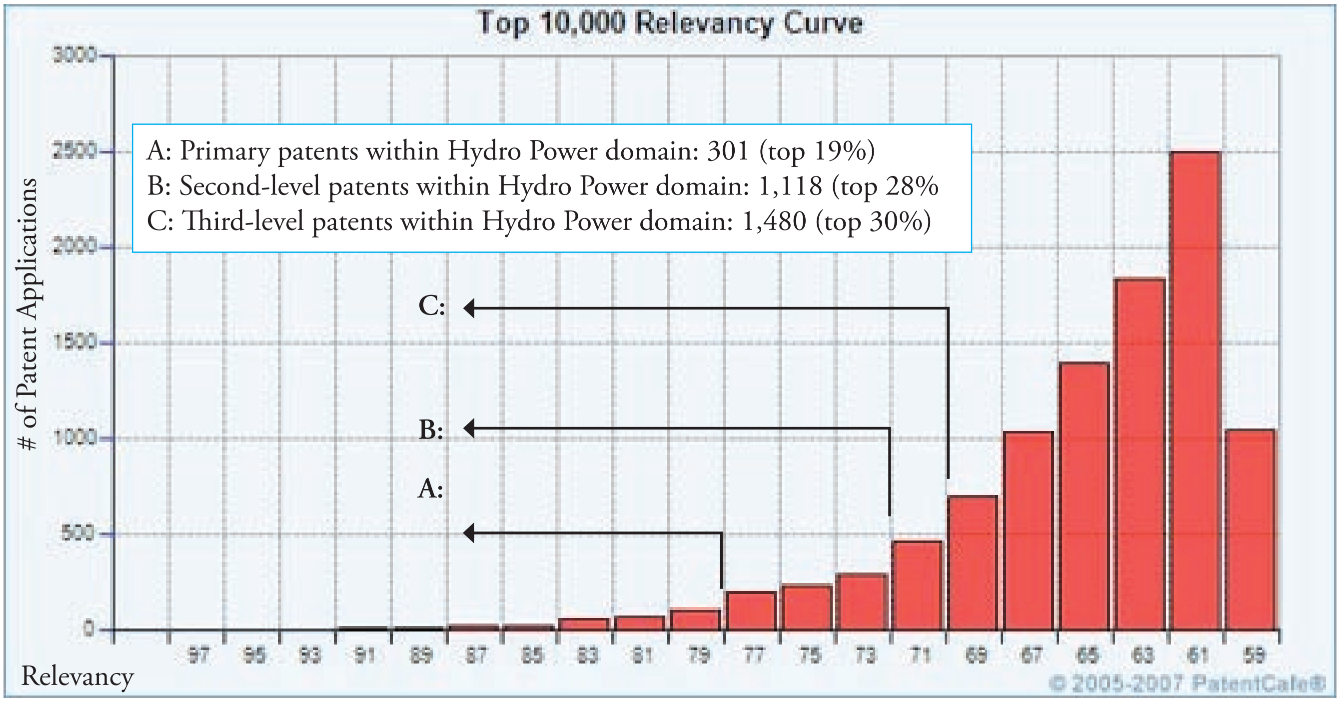
A similar analysis of international patent applications (PCT) on Page 11. identifies global filing trends in hydropower technology. Specifically, there is a trend by US companies to first file patent applications with the World Intellectual Property Organization (international patent filing authority for Patent Cooperation Treaty countries).

A search of the PCT patent database was conducted to identify international patent applications related to TIDAL POWER generation systems, a subordinate focus with the broad range of HydroPower technologies.

Defining The US Technology Landscape - Finding *Most Relevant* Within Top 10,000

PatentCafe analyzes the most relevant 10,000 patents first listed in the Semantic search results. The LSA engine computes the relevancy of the patents against the patent search query, and organizes the patents in groups which represent the "distance" between the most relevant patents, and those that are not relevant.

As the relevancy curve is generated, "jumps" that are not smooth curve progressions between in each relevancy column, called "inflection points" show where there is a decided shift away from the core technology being searched. This chart below shows three clear inflection points within the top 70% most relevant patent applications. With this scope of technology identified, the patent research can begin to re-focus only on this patents for the most efficient and complete data analysis.



Applications for patents claiming the various core technologies used within the broadly defined "Hydro Power" industry.

Investment within the Hydro Power industry should focus on the top 28%, or about 1,200 applications. ***Within this technology domain, multiple patent ownership, ownership trends, quality analysis of patents within the domain, changes in filing trends, and various other indicators would identify leading (major patent owners0 verses emerging (newly appearing patent applicants) companies.***

Secondary investment due diligence would focus on specific patent classifications and/or specific companies to:
- more definitively identify competitive landscape within narrow technologies.
- more definitively identify potential for cross-industry application of each narrow technology.
- qualitative analysis of individual patents and small portfolios owned by various companies.

This process, using LSA and statistical patent analysis, finds the most important patents faster, saving considerable time and cost compared to traditional keyword search services.

"Green Tech" inventions may already be core technologies developed for other industry segments (risk of patent invalidity), or may be licensed / leveraged between companies addressing non-competitive market segments.

HydroPower Technology Comparison Chart

A broad description of the general market areas outlined above was used to identify the most relevant US patents and patent applications within each market area. Following the market-by-market analysis, a comparison grid was developed to identify where the technologies within one market area were the same or similar to technologies in the other "green technology" markets.

In each of the charts shown in this report, the "focus technology" is highlighted in yellow. Then, the occurrence of each primary technology in other markets is shown, highlighted in blue.

Investment: A financial investment, or and R&D product development commitment within the Hydro Power area must recognize that the same or similar technologies are, or have been developed in other market segments - for solving substantially the same problem.

HYDROPOWER

Core Technology Taught In Primary Patents	*Wind Power*	*Solar Power*	*Ocean Energy*	*Hydropower*	*Geothermal*	*Biomass*	*Cogeneration*	*Batteries*	*Fuel Cells*	*Natural Foods*	*Clean Water*	*Clean Air*	*Natural Gas*	*Recycling*
Power Plants	•	•	•	•	•	•	•					•	•	
Prime-Mover Dynamo Plants	•	•	•	•	•	•	•							
Distillation: Apparatus	•	•	•	•	•		•							
Electrolysis: Processes		•	•	•	•				•					
Aeronautics And Astronautics	•	•	•	•										
Chemistry Of Inorganic Compounds	•		•	•		•						•	•	
Rotary Kinetic Fluid Motors Or Pumps	•		•	•										
Fluid Reaction Surfaces (I.E., Impellers)	•		•	•										
Hydraulic And Earth Engineering			•	•							•	•		•
Ships			•	•								•		
Communications, Electrical: Acoustic Wave Systems			•	•										
Chemistry: Electrical Current Producing Apparatus		•		•		•	•	•	•				•	
Electrical Transmission Or Interconnection		•		•				•						
Electricity: Battery Or Capacitor Charging		•		•				•						
Ammunition And Explosives				•										
Electric Resistance Heating Devices				•										
Marine Propulsion				•										

An investment in a PORTFOLIO of companies should recognize core competencies, as well as core technologies, and leverage distribution channels, production capability, engineering expertise, and know how across the portfolio.

Strategy: Understand where the same or similar technologies reside in relatively non-competitive market areas.

Objective: Provide critical decision-support information that allows strategic planners to:

a) shorten development cycle time and cost by licensing relevant technologies FROM other patent owners,
b) mitigate infringement risk by developing products that work around competitive technologies,
c) leverage R&D investments by licensing TO companies likely to be interested in the technology,
d) identify and acquire key patents as stand-alone assets that can be deployed across a portfolio of companies.

HYDROPOWER Technology Owners of Top 500 most relevant US patents and applications.

(##) = number of patents identified as useful in the HYDRO Power segment.

Blue Bold show large companies as potential acquirers (exit strategy) or technology licensees

Subsequent research into each of the "hydropower" patent owners in Black, as well as hundreds of patent applications for which there are not patent assignees / applicants listed, would be necessary to identify the newest emerging technologies and companies.

The following list is only a representative sample of the companies identified in the top 500 United States granted patents and published applications (for patent applications listing applicant names).

12	**Ormat Turbines Ltd**
7	Earthrenew Organics Ltd
7	The United States Of America As Represented
6	Energy Conversion Devices Inc
5	Stuart Energy Systems Inc
4	American Electric Power Company Inc
4	**Exxon Mobil**
3	**General Electric Company**
3	**Mitsubishi Heavy Industries Ltd**
3	**Sprint Communications Company L P**
3	The Earth Science Laboratory Corp
3	The Regents Of The University Of California
2	Advanced Combustion Energy Systems Inc
2	**Dakota Ag Energy Inc**
2	Encotech Inc
2	Energy Economics &development Inc
2	Grow International Corp
2	Hce Llc
2	**Matsushita Electric Industrial Co Ltd**
2	Rwe Energie Aktiengesellschaft
2	**Schlumberger Technology Corporation**
2	Thiessen Lavoy M Jr
2	University Of Florida
2	World Hydrogen Energy Llc
2	Yuan Ze University
1	Addpower Ab
1	Ahlstrom Machinery Oy
1	Alstom Technology Ltd
1	Aminoil Usa Inc
1	Andritz Oy Helsinki Finland
1	Ann Arbor Nuclear Inc
1	Aquarius Technologies Limited
1	Armament Development Authority Ministry Of
1	Battelle
1	**Bayer Aktiengesellschaft**
1	Biokat Corporation
1	Board Of Supervisors Of Louisiana State Uni
1	Board Of Trustees Of Southern Illinois Univ
1	Boliden Aktiebolag
1	Borealis Technical Incorporated Limited
1	Buttes Gas &oil Co
1	Capstone Turbine Corporation
1	Carbon Fuels Corporation
1	Carin Legal Representative Christianne
1	Compagnie Francaise D'etudes Et De Construc
1	Consolidated Natural Gas Service Company In
1	Cool Clean Technologies Inc
1	Cyborex Laboratories Inc
1	D B I Century Fuels And Aerospace Services
1	Degremont
1	Den Norske Stats Oljeselskap A S
1	**Deutsche Babcock &wilcox Aktiengesellschaft**
1	Easy Harvest Enterprise Company Ltd
1	Eco/technologies Llc
1	Efficient Production Technologies Inc
1	Eldesvik As
1	Energiagazdalkodasi Intezet
1	Enertech Environmental Inc
1	Enmass Inc
1	Falconbridge Nickel Mines Limited
1	Fasanello Jr John
1	France Telecom
1	Ga Technologies Inc
1	Georgia Tech Research Corporation
1	Hadronic Press Inc
1	Have Blue Llc
1	Heidel Robert Eric
1	Heinz
1	H-empower Corp
1	Heronemus Phyllis R
1	High Speed Tech Oy Ltd
1	Hokkaido University
1	**Honeywell Corporation**
1	Houston Industries Incorporated
1	Infinite Power Corporation
1	Integrated Environmental Technologies Llc
1	Interatom Internationale Atomreaktorbau Gmb
1	International Combustion Enhancement Corp
1	Intevep S A
1	Jgc Corporation
1	Kinder Morgan Inc
1	Lawrence Waldemar
1	Leonard
1	**Lockheed Martin Corporation**
1	Los Angeles Advisory Services Inc
1	Massachusetts Institute Of Technology
1	Maxwell Laboratories Inc
1	Mcdermott Technology Inc
1	Navitas Energy Inc
1	New York Testing Laboratories Inc
1	Nextek Power Systems Inc
1	**Northern Illinois Gas Company**
1	**Northern States Power Company**
1	Osaka Gas Company Limited
1	Oy Metsa-botnia Ab
1	Powerstreams Inc
1	Practical Technology Inc
1	Production Resources Inc
1	Pyropower Corporation
1	Railpower Technologies Corp
1	Reveo Inc
1	Rheinbraun Aktiengesellschaft
1	**Rockwell International Corporation**
1	Rollins; William S
1	Sensor Labo Corp
1	Sir Henry Lawson-tancred Sons &co Ltd
1	Solmat Systems Ltd
1	Solmecs (Israel) Ltd
1	Summit Views Llc
1	**Sundstrand Corporation**
1	Superstill Corporation
1	The Agricultural Gas Company
1	The Chinese Academy Of Sciences
1	The Cooper Union For The Advancement
1	The Johns Hopkins University
1	The Kansai Electric Power Co Ltd
1	The Keller Corporation
1	**Union Oil Company Of California**
1	Uop Inc
1	Ut-battelle Llc
1	Veritask Energy Systems Inc
1	Western Syncoal Llc
1	Xcellsis Gmbh
1	Ztek Corporation

Newest (2007) HydroPower Technology US Patent Applications

1) Minimum 80% Semantic Relevancy
2) Published without a recorded company assignment.

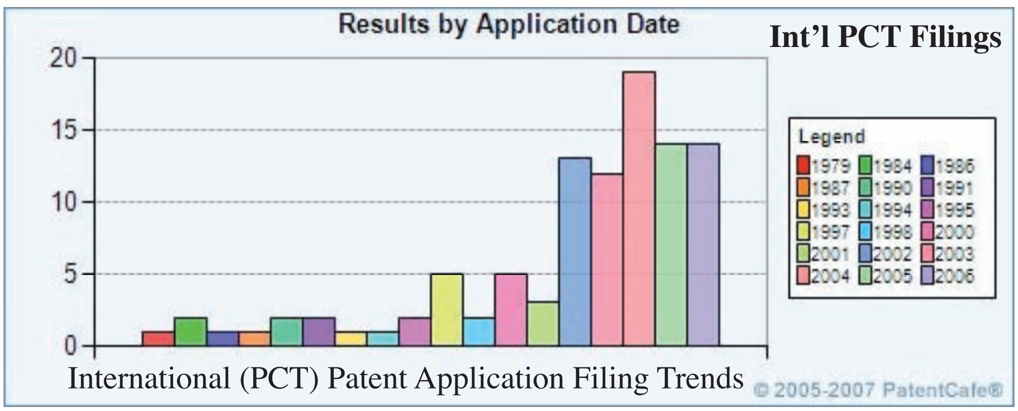
Document	Title	Publish	Class	Inventor	Semantic Engine Identified Keywords
USA 20070079611	Renewable power controller for hydrogen production	4/12/07	60	Doland George J	energy; electricity; power; generation; renewable; efficiency; consumption; produce; electric; efficiently;
USA 20070080539	Method of operation for a self-protecting wave energy conversion plant	4/12/07	290	Kelly Hugh-Peter Granville	generators; energy; power; wave; powered; sea; supply; floats; source; land;
USA 20070119148	Method and system for producing electricity	5/31/07	60	Diaz Angel Severino	generator; electricity; steam; generated; turbine; water; channeled; produce; producing; directing;
USA 20070108774	Archimedes power generator	5/17/07	290	Estes Bruce Charles	generator; electricity; power; ocean; turbines; turbine; water; tidal; produce; tides;
USA 20070077137	Altitude density differential pressure induced draft powered wind turbine electric generating system	4/5/07	415	Beard Danny Franklin	energy; electricity; wind; generate; turbine; source; altitude; density; needed; create;
USA 20070107432	Packaged system for the production of chemical compounds from renewable energy resources	5/17/07	60	Smith Sheldon	energy; electricity; renewable; generating; water; source; system; production; hydrogen; distributing;
USA 20070040388	Wind turbine for use offshore	2/22/07	290	Nielsen Finn Gunnar	generator; energy; turbines; wind; waves; turbine; sea; tower; mooring; offshore;
USA 20070116565	System for producing electricity through the action of waves on floating platforms	5/24/07	416	Beane Glenn	energy; electricity; waves; water; electrical; moves; producing; converted; create; mechanical;
USA 20070017228	Method for enhancing the efficient operation of electrical power plants and energy storage	1/25/07	60	Surma Jeffrey E	generator; electricity; power; efficient; demand; electrical; convert; plant; high; supplied;
USA 20070081861	Wave generator	4/12/07	405	Goble Rowland H	generator; energy; ocean; turbines; wave; waves; generating; water; shoreline; electric;
USA 20070035138	Vacuum powered generators	2/15/07	290	Khan Sajid Ali	generators; energy; turbines; wind; propellers; electric; electrical; convert; move; mechanical;
USA 20070018458	Method and apparatus for wave energy conversion using a floating pulley and counterweight	1/25/07	290	Martinez Melaquias Eugene	energy; power; ocean; wave; generating; tether; motion; moves; float; conversion;
USA 20070017223	Method and apparatus for improving the energy conversion efficiency of electrical power generators	1/25/07	60	Duello Michael	generator; energy; power; efficiency; efficient; electrical; conversion; increases; applications; thermoelectric;
USA 20070029805	Device for deriving energy from moving fluids	2/8/07	290	Marchetti Antonio	energy; turbines; wind; water; marine; submarine; floats; flood; altitude; exploitation;
USA 20070089651	Electrically fired steam locomotive	4/26/07	110	Pandey Alok	generator; electricity; power; steam; generate; water; superheated; boiler; economizer; supply;
USA 20070122279	Water wall turbine	5/31/07	416	Botha Lodewyk Michael	energy; kw; generation; kinetic; renewable; turbine; water; submerged; electrical; flotation;
USA 20070102933	Electrical generator	5/10/07	290	Turner Timothy John Emmanuel	generator; power; generated; water; buoyant; pylon; pylons; electrical; motion; float;
USA 20070084396	Compact high-power acoustic tone generator	4/19/07	116	Cleckler Jay B	generators; generator; energy; power; waves; generate; high-power; energetic; acoustic; source;

Tidal Power (Sub-segment of HydroPower Market) Latent Semantic Analysis

CLAIMS of a target "Tidal Power" patent (Semantic Search Query): *"A Power generating station is established either within a river 2- an estuary or off-shore, to produce electricity from the Kinetic Energy of the water velocity using a barrage between the river bank or shore and an artificial island. The water velocity being magnified by the application of the venturi effect. As claimed in Claim lv a chain of such coastal stations if judiciously located can continuously produce electricity. As claimed in Claim 17 the half barrier does not have to be high enough to retain a reservoir of water. Therefore the structure is smaller, can be built faster at lower cost and be brought into commission earlier than the equivalent full barrier. Whereas the full length barrier schemes cannot easily be built in series to provide continuous generation the claim in Claim 27 effectively places generating stations in parallel. This allows the chain of stations to provide continuous generation due to the overlapping nature of the tidal phases. 5 As claimed in Claim 17 the magnitude of power generation is completely scalable. The simplest case consisting of a single turbine/generator set. 6a If judiciously placed 7 the off-shore structure claimed in Claim 2, will have a significant impact on the reduction of coastal erosion. 7 As claimed in Claim 17 dividinci the estuary/river barrage into two sections 7 avoids the silting and environmental problems associated with a full barrage. 8 As claimed in Claim 7 this method of construction allows full access to any up-river port without the need to provide access locks. 9 As claimed in Claim 27 electrical power can be generated continuously from-the non-polluting power source of the tides and rivers. 10 As claimed in Claim 17 some of the islands need not be completely passive. In suitable places 7 the outer walls can be adapted to perform the duties of harbour or marina type installations. As claimed in Claim 17 to avoid using smaller turbines that tend to be relatively more costly than larger ones 7 the velocity gain of the secondary venturis can be maintained in shallow water applications by adopting an elliptical aperture for the open end of the duct."*

International Patent Data

Companies that desire multi-national patent protection often opt for filing the initial patent application with the World Intellectual Property Organization (WIPO). The applications are filed under the terms of the Patent Cooperation Treaty (PCT).



WIPO does not grant patents, but rather performs the initial search, then forwards the partially-completed application to the various countries that the patent applicant has elected.

At that time, the application enters the "national phase" patent process for each country. In turn, each country will grant the patent on the applicant's invention under their own laws.

PCT applications routinely identify patent applicants filing for protection on new inventions earlier than the applications of individual countries (e.g.: United States). Therefore, PCT analysis is an indispensable research resource, even if the primary focus is on companies or inventions originating within the United States.

Latent Semantic Analysis using the search query above generated a relevancy-ranked list of patent search results. The first 100 most relevant international PCT patent applications were extracted for analysis.

Still, deeper analysis of each technology area, major competitors and trends within each area, international patent filings, prolific inventors, and other metrics would deliver the required patent intelligence for investment or strategic planning decisions.

A comparison of patent applications from year-to-year would identify early new entrants into the HydroPower industry.

Following chart shows the top relevancy ranked patent applications disclosing technologies used in Tidal Stream Electrical Power Generation.

Document	Title	Filing Date	Applicant	Inventor
WO 1991/11614	Electrical Power Generation Using Tidal Power	1/30/91	Lewis Geoffrey Edward	Lewis Geoffrey Edward
WO 2004/109172	A Method Of Storing And Transporting Wind Generated Energy Using A Pipeline System	6/1/04	Ben Enis M	None On Record
WO 2006/119649	Energy Distribution Micro Grid	5/15/06	Start Corporation	Naskali Pertti H
WO 1998/01670	Tidal Current Energy Converter	7/3/97	Hulsbergen Cornelis Hendrik	Hulsbergen Cornelis Hendrik
WO 2006/032892	Hydrodynamic Energy Generating Assembly And Method	9/22/05	Saunders Douglas	Saunders Douglas
WO 2002/066829	Wave-powered Generator Device	1/31/02	Andersen Egil	Andersen Egil
WO 2005/098233	W.w. Generator	3/7/05	Learmonth Alfred	None On Record
WO 1997/47878	Wind Turbines	5/23/97	Industrial Research Limited	Tallon Jeffery Lewis
WO 2006/006060	Method For Producing Hydrogen And System That Applies Said Method	6/22/05	Hidrgeno Capricornio S L	Serrano Molina Jos Antonio
WO 2007/022549	Water Wall Turbine	8/18/06	Botha Lodewyk Michael	Botha Lodewyk Michael
WO 2005/026535	Tidal Energy System	7/10/04	Atiya Ramez	None On Record
WO 2004/027257	Apparatus For Generating Electrical Power From Tidal Water Movement	9/10/03	Soil Machine Dynamics Limited	Manchester Jonathan Ralph
WO 2006/043932	Wind Powered Generator Platform	10/14/04	Lee Tommy L	Lee Tommy L
WO 2005/052362	Renewable Energy Resources	11/18/04	Wind Save Limited	Gordon David Hyman
WO 2003/083292	Underwater Current Generator	4/1/03	Duthie Stewart	Duthie Stewart
WO 2003/008803	Mobile Wind And Solar Energy Aggregate	7/17/02	Ceap B V	None On Record
WO 2003/029645	Power Generator And Turbine Unit	10/4/02	Rotech Holdings Limited	Susman Hector Fillipus Alexander Van Drenth
WO 2007/045853	Conversion Of Energy In Waves And In Tidal Flow	10/18/06	Marine Current Turbines Limited	Fraenkel Peter Leonard
WO 1999/20896	Method And Arrangement For Converting Kinetic Energy Of Ocean Currents Into Rotatory Energy	9/15/98	Lagstrm Gran	Lagstrm Gran
WO 2005/008062	A Wind Power Station Module, A Wind Power Station Comprising Such A Wind Power Station Module, And A Wind Power Station Park	7/9/04	Gull Rolf	None On Record
WO 2004/060809	**Extracting Energy From Non-potable Water Of A Sewer Process** **[Also a "clean water" technology]**	**12/10/03**	**Murcia Philippe R**	**None On Record**
WO 2004/113720	A Method Of Coordinating And Stabilizing The Delivery Of Wind Generated Energy	6/14/04	Enis Ben M	None On Record
WO 2005/021960	Method And Apparatus For Generating Electricity	8/25/04	Summersell James	None On Record
WO 2007/049299	Bringing Power Stations To Door Steps	10/20/06	Fernandez B L J	Fernandez B L J
WO 2003/031813	Method And Apparatus For Using Wind Turbines To Generates And Supply Uninterrupted Power To Locations Remote From The Power Grid	10/4/02	Not Assigned	Lieberman Paul
WO 2006/085830	A Method Of And A Device For The Reduction Of Tropical Cyclones Destructive Force	2/9/06	Solc Jozef	Solc Jozef
WO 1995/23923	Controlled Flow System Of Power Production	3/1/94	Allen Alexander George	Allen Alexander George
WO 2005/017349	Energy Generator Powered By Tidal Currents	8/12/04	Tidetec As	Kollandsrud Per
WO 2003/089721	A System For Generating Power	10/3/02	Hastings Stephen John	Hastings Stephen John
WO 2007/009192	Power Generation System	7/21/06	Hastings Stephen John	Hastings Stephen John
WO 2001/28077	Power Generation System	10/11/00	Puna Raymond Kaukohea	Puna Raymond Kaukohea
WO 2001/38650	Reservoirs	11/22/00	Keyter Anton	Keyter Anton