

*WindStor*SM

Renewable Energy Generation,
Storage & Distribution System



McKenzie Bay
INTERNATIONAL LIMITED

WindStor Info (888) 886-9678 - General Info (800) 631-8127
Email - Info@mckenziebay.com – Website - www.mckenziebay.com - Symbol: **MKBY**

*WindStor*SM

RENEWABLE ENERGY GENERATION, STORAGE & DISTRIBUTION SYSTEM

McKenzie Bay is developing and commercializing *WindStor*SM, based on the DERMOND wind turbine, Vanadium electricity storage devices and a proprietary System Integrator through three integrated subsidiaries:

DERMOND INC, will manage fabrication and ongoing development of its Vertical Axis Wind Turbine, the “*DWT*SM”

WindStor Power Co. “WPC” will market, install, manage and maintain WindStor. WPC will either sell WindStor generated electricity or rent WindStor systems directly to the electricity user.

Lac Dore Mining Co, a mining and refining company, owns 100% of and is developing the Lac Doré Vanadium-Titanium deposit in Quebec, Canada



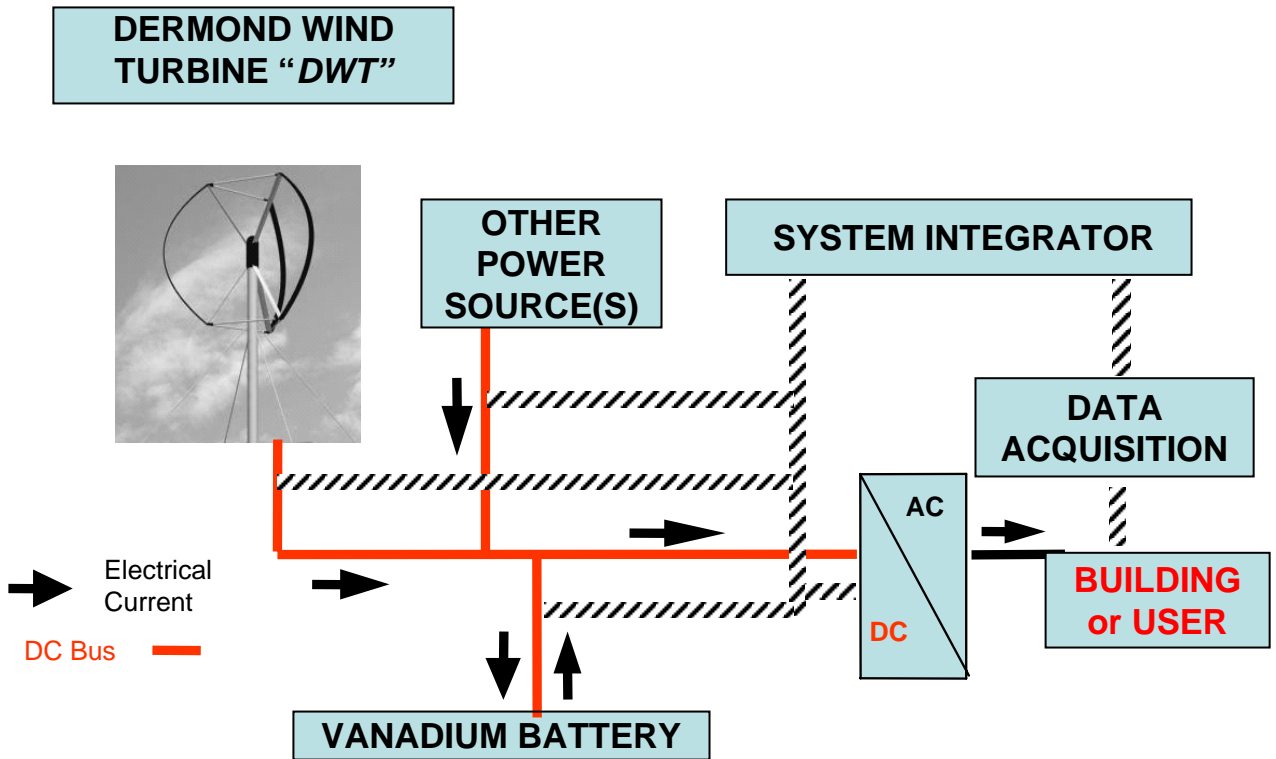
WindStorSM

A “*Green Energy*” electricity management system that generates electricity with a **DERMOND Wind Turbine “DWTSM”**, stores electricity in a Vanadium-based battery and a proprietary “*System Integrator*” distributes electricity from the least costly source for partial or complete isolation of a structure or location from the grid



WindStorSM

FUNCTIONAL DIAGRAM



WindStorSM

DERMOND WIND TURBINE “DWT”

Second Generation Vertical Axis Wind Turbine Technology

DERMOND’s, patent applied for, improvements represent a simplified and advanced model of proven VAWT technology

Features & Advantages



- Urban rooftop or ground level installations
- Omni-directional for higher wind efficiency
- Simple, durable design requiring minimal maintenance
- Quadruple blade attachments maximize safety
- Guy-wired adaptable mast provides additional stability and safety
- Designed to withstand +135 mph winds
- Low operating noise
- Power output: 100 kW to +MW
- Sensor controls avoid harmonic and vibration zones
- Lightweight - 100 kW unit weight is ~ 6,000 pounds

*WindStor*SM

PROPRIETARY SYSTEM INTEGRATOR

Features & Advantages

Automatically selects and distributes the least expensive power to the user

Manages multiple DC power inputs received from one or more *DWT*s plus a battery and/or other sources, to a single AC power connection for distribution

Manages the quality of power delivered to user at the AC connection point

Manages power production from the individual energy sources via remote and/or wired communication links

Sends instructions to individual Turbine Controllers for Set Power or Maximum Power Mode of each *DWT* to match user demand

Sets and manages a safe reserve of available power to maintain electricity stability for the user when sudden load changes occur

Simultaneously performs data acquisition and transmission to a communication center

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VANADIUM BATTERY TECHNOLOGIES

Operating Advantages

- High performance, low cost
- Environmentally friendly
- Highly efficient, no memory effect

Safety

- No hydrogen monitoring
- Low operating temperature
- Not pressurized

Unmatched Versatility

- Flexible form factor
- Low volume and weight
- Rack mountable

Superior Performance

- Capable of thousands of cycles
- Long cycle life
- Fast recharge time
- Smart battery monitoring

*WindStor*SM

ELECTRICITY COST MANAGEMENT

PURCHASE *WINDSTOR* SYSTEM GENERATED & STORED ELECTRICITY

- No capital appropriation – pay as you receive power
- Long term fixed rates for power supply
- Reduces existing power costs
- Minimizes impact of future rate increases
- Improved power factor and stability
- Load-leveling & peak shaving
- Surge & sag protection
- Uninterruptible power supply
- Partial or complete independence from the grid

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CASE STUDY - ROOFTOP MOUNTED LOAD-LEVELING - PEAK-SHAVING

Pre- WindStor Electricity Costs

<u>Demand Charge</u>	<u>kW</u>	<u>\$ kW</u>	<u>Total \$/yr</u>
Peak	1,892	13.35	\$ 25,262
Near Peak	2,499	3.675	\$ 9,185
Off Peak	2,922	2.55	\$ 7,451
<u>Energy Charge</u>	<u>kWh/yr</u>	<u>\$ kWh</u>	
Peak	178,634	\$ 0.18843	\$ 33,660
Near Peak	466,764	\$ 0.11232	\$ 52,427
Off Peak	952,789	\$ 0.09180	\$ 87,466
Annual Pre-WindStor Electricity Costs			\$ 215,451

Post- WindStor Electricity Costs

<u>Demand Charge</u>	<u>kW</u>	<u>\$ kW</u>	<u>Total \$/yr</u>
Peak	1,308	13.35	\$ 17,462
Near Peak	2,137	3.675	\$ 7,853
Off Peak	2,133	2.55	\$ 5,439
<u>Energy Charge</u>	<u>kWh/yr</u>	<u>\$ kWh</u>	
Peak	49,355	\$ 0.18843	\$ 9,300
Near Peak	69,072	\$ 0.11232	\$ 7,758
Off Peak	1,170,300	\$ 0.09180	\$ 107,434
WindStor Charge - kWh	309,460	\$ 0.14*	\$ 43,324
Annual Post-WindStor Electricity Costs			\$ 198,570
Annual Cost Reduction			\$ 16,881

WindStor Equipment

One 100 kW *DWT* Unit
500 kWh Battery

* Blended rate for generated power, battery storage, and distribution

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CASE STUDY - FORWARD HEDGE LOAD-LEVELING PEAK-SHAVING CALIFORNIA ROOFTOP MOUNTED 5.0% ANNUAL RATE INCREASE

<u>YEAR</u>	<u>100% GRID</u>	<u>COMBINED WINDSTOR-GRID</u>			
	<u>ANN-COST</u>	<u>GRID</u>	<u>WINDSTOR</u>	<u>COMBINED</u>	<u>REDUCTION</u>
1	\$332,014	\$267,725	\$43,324	\$311,050	\$20,964
2	\$348,615	\$281,112	\$43,324	\$324,436	\$24,179
3	\$366,045	\$295,167	\$43,324	\$338,492	\$27,554
4	\$384,348	\$309,926	\$43,324	\$353,250	\$31,098
5	\$403,565	\$325,422	\$43,324	\$368,746	\$34,819
6	\$423,743	\$341,693	\$43,324	\$385,017	\$38,726
7	\$444,930	\$358,778	\$43,324	\$402,102	\$42,828
8	\$467,177	\$376,717	\$43,324	\$420,041	\$47,136
9	\$490,536	\$395,552	\$43,324	\$438,877	\$51,659
10	\$515,063	\$415,330	\$43,324	\$458,654	\$56,408



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CASE STUDY - SURFACE MOUNTED URBAN +50.0% WIND PENETRATION

Pre-*WindStor* Electricity Costs

Annual Pre-WindStor Electricity Costs	\$ 283,389
Annual kWh consumed	2,805,554
Annual average cost per kWh	\$ 0.10101

Post-*WindStor* Electricity Costs

Grid supplied kWh	907,554	\$ 0.10101	\$ 87,307
<u>WindStor Charge - kWh</u>	1,898,000	\$ 0.09	\$ <u>170,820</u>
Annual Post-WindStor Electricity Costs			\$ 258,127
Annual Cost Reduction			\$ 20,897

WindStor Equipment

Eight 100 kW *DWT* Units
1,000 kWh Battery

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CASE STUDY - FORWARD HEDGE URBAN +50.0% WIND PENETRATION NEVADA SURFACE MOUNTED 5.0% ANNUAL RATE INCREASE

<u>YEAR</u>	<u>100% GRID ANN-COST</u>	<u>COMBINED WINDSTOR-GRID</u>			
		<u>GRID</u>	<u>WINDSTOR</u>	<u>COMBINED</u>	<u>REDUCTION</u>
1	\$297,558	\$ 96,256	\$170,820	\$267,076	\$ 30,483
2	\$312,436	\$101,068	\$170,820	\$271,888	\$ 40,548
3	\$328,058	\$106,122	\$170,820	\$276,942	\$ 51,116
4	\$344,461	\$111,428	\$170,820	\$282,248	\$ 62,213
5	\$361,684	\$116,999	\$170,820	\$287,819	\$ 73,865
6	\$379,768	\$122,849	\$170,820	\$293,669	\$ 86,099
7	\$398,757	\$128,992	\$170,820	\$299,812	\$ 98,945
8	\$418,695	\$135,441	\$170,820	\$306,261	\$112,433
9	\$439,629	\$142,213	\$170,820	\$313,033	\$126,596
10	\$461,611	\$149,324	\$170,820	\$320,144	\$141,467