

ENERGY SQUEEZER

- **Small Vertical Axis Wind Turbine System for Access to Energy, Electrification**

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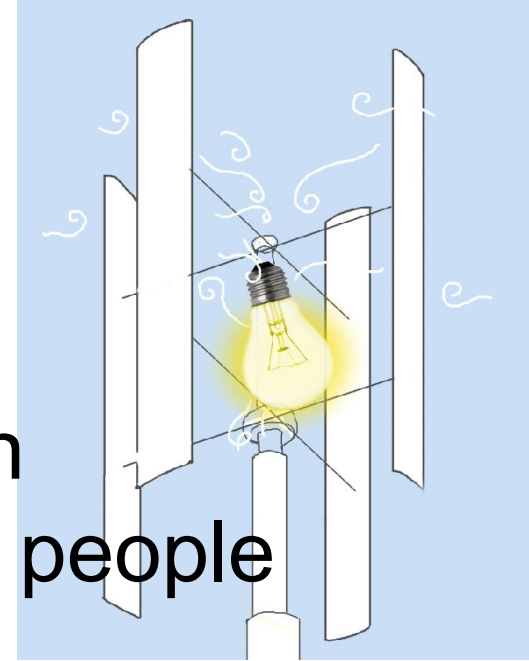


Mandate

→ Opportunity!

**Access
to
Energy**

UN : Electrification
for 1.4 billion people
by 2030



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ADB : *Energy for All*

100 million in Asia by 2015

**→ 1million people with
Small Wind Turbines
by 2015**

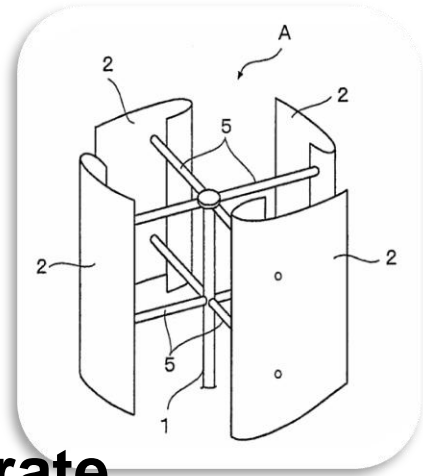
Challenges for the Realization I

Engineering Challenge

Unfavorable Wind
→ Too Weak to Turn Blades

Low RPM/Torque
→ Too Weak to Generate Electricity

Small Electricity
→ Too Weak to Enter into Battery



Cygnus Solution

Patented
Blades &
Generator

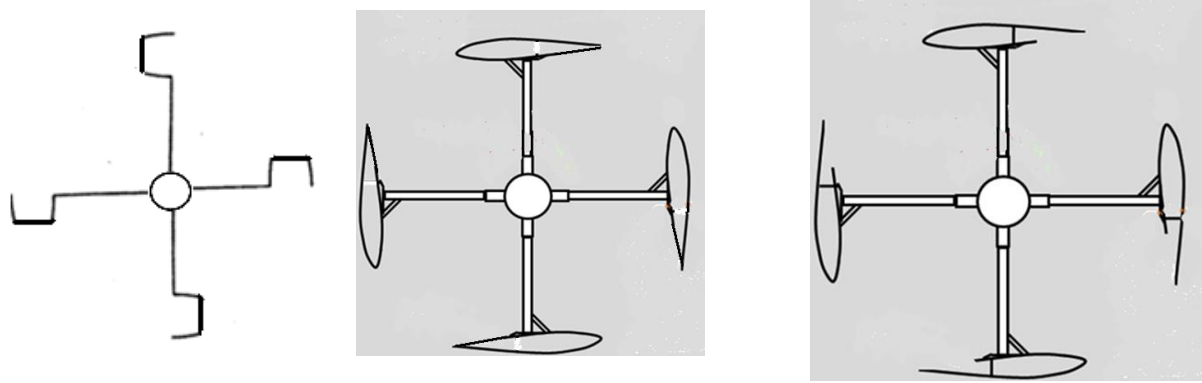
Hybridized with
Super-
Capacitor

Small Wind Near Households

[Unfavorable Wind Condition]

→ Too Weak to Turn Blades

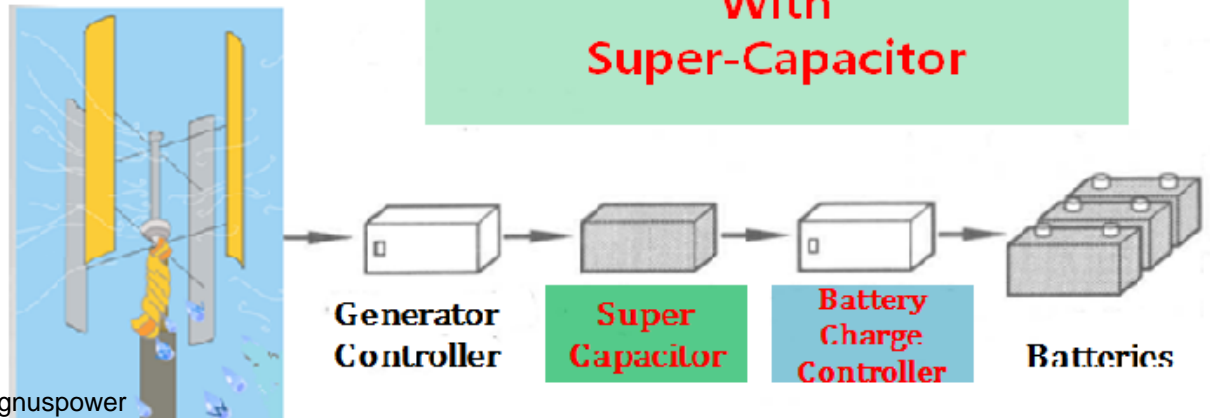
→ Use Cygnus Blades



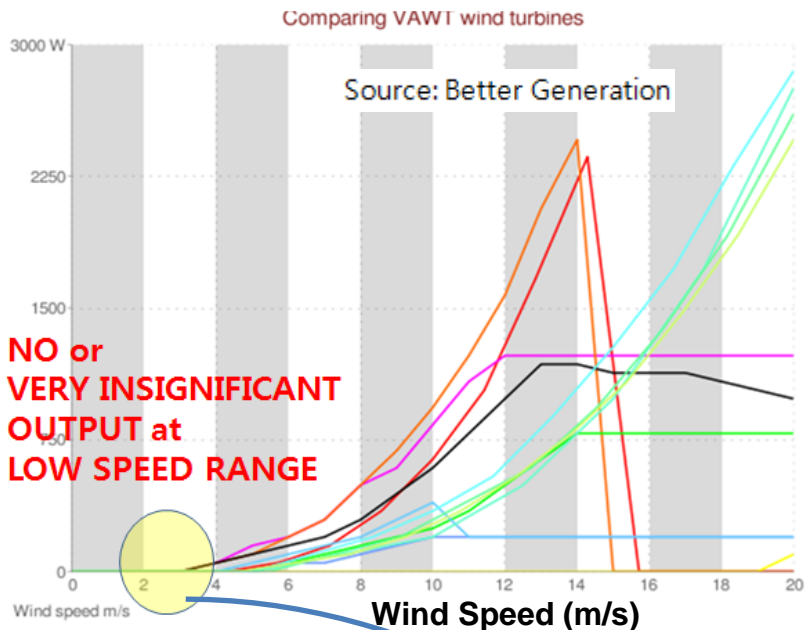
Drag Type + Lift Type = CYGNUS Blade

Produced Electricity:
Too Weak To Overcome Battery Resistance

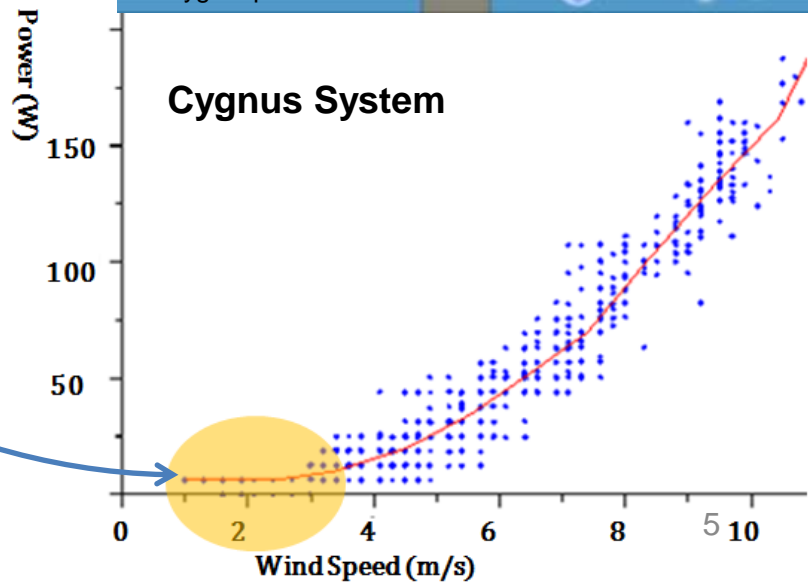
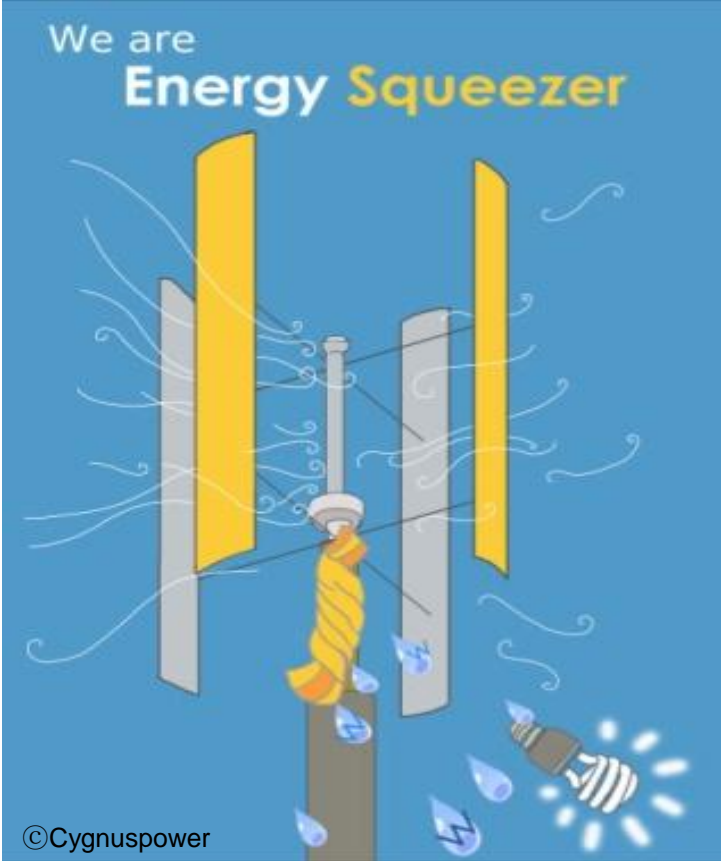
Hybridize the Energy Storage System With Super-Capacitor



Examples of Power Curves for Ordinary VAWT



SQUEEZ ENERGY

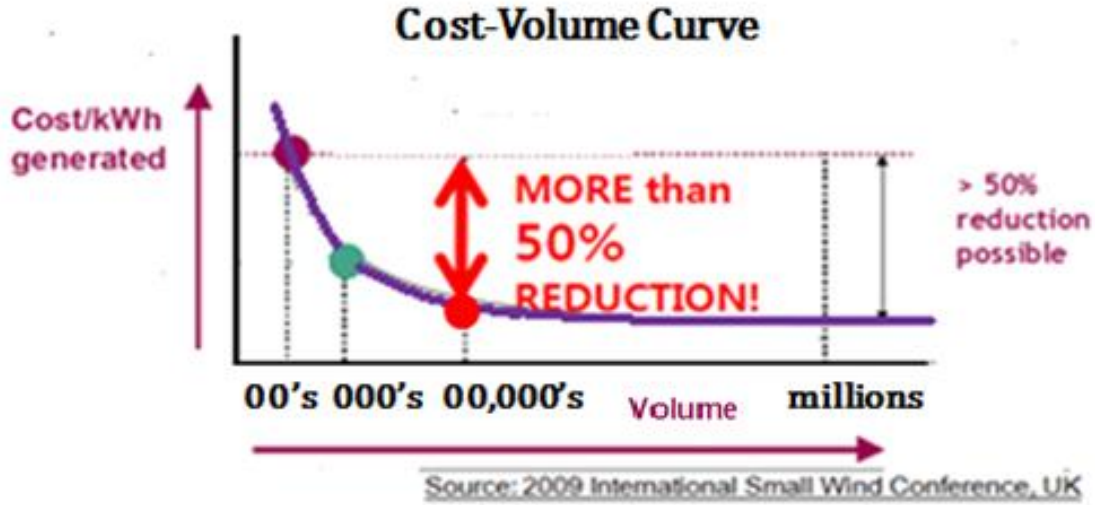


Challenges for the Realization II

Economic Challenge

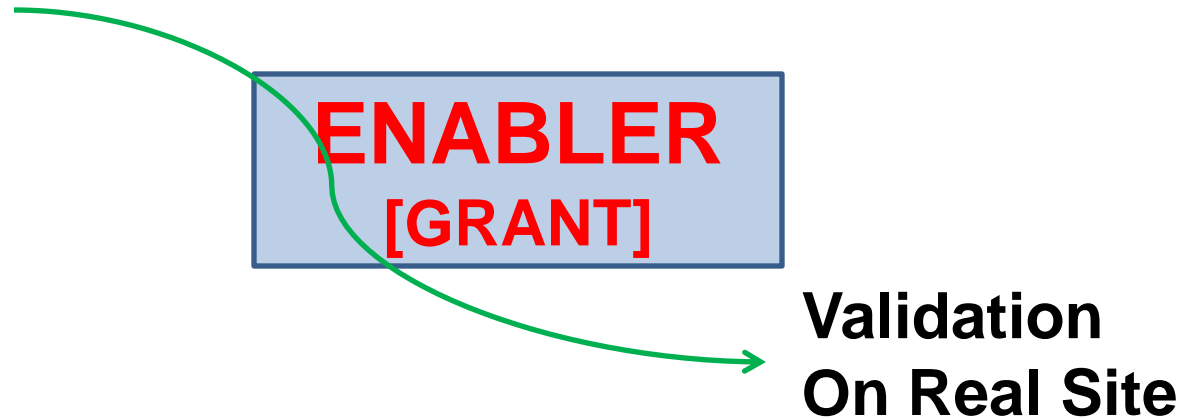
Current Cost : US\$4,000/kW
→ **Unaffordable**

DEMAND MEETS COST



[2005] £ 3000/kW → [VOLUME PRODUCTION] → [circa 2015] £ 1000/kW
→ [2050] £ 700~ £ 500/kW Based on 1.5kW wind turbine, Energy Saving Trust

Target : Energy for All
Technology : Cygnuspower



Success of the System Depends On
Local Situation [Wind & People}



Business Team : Technology Provider, Enabler, Owner/User