



San Cristobal Galapagos Wind Power Project



Jim Tolan
Project Director



Sustainable Engineering Worldwide



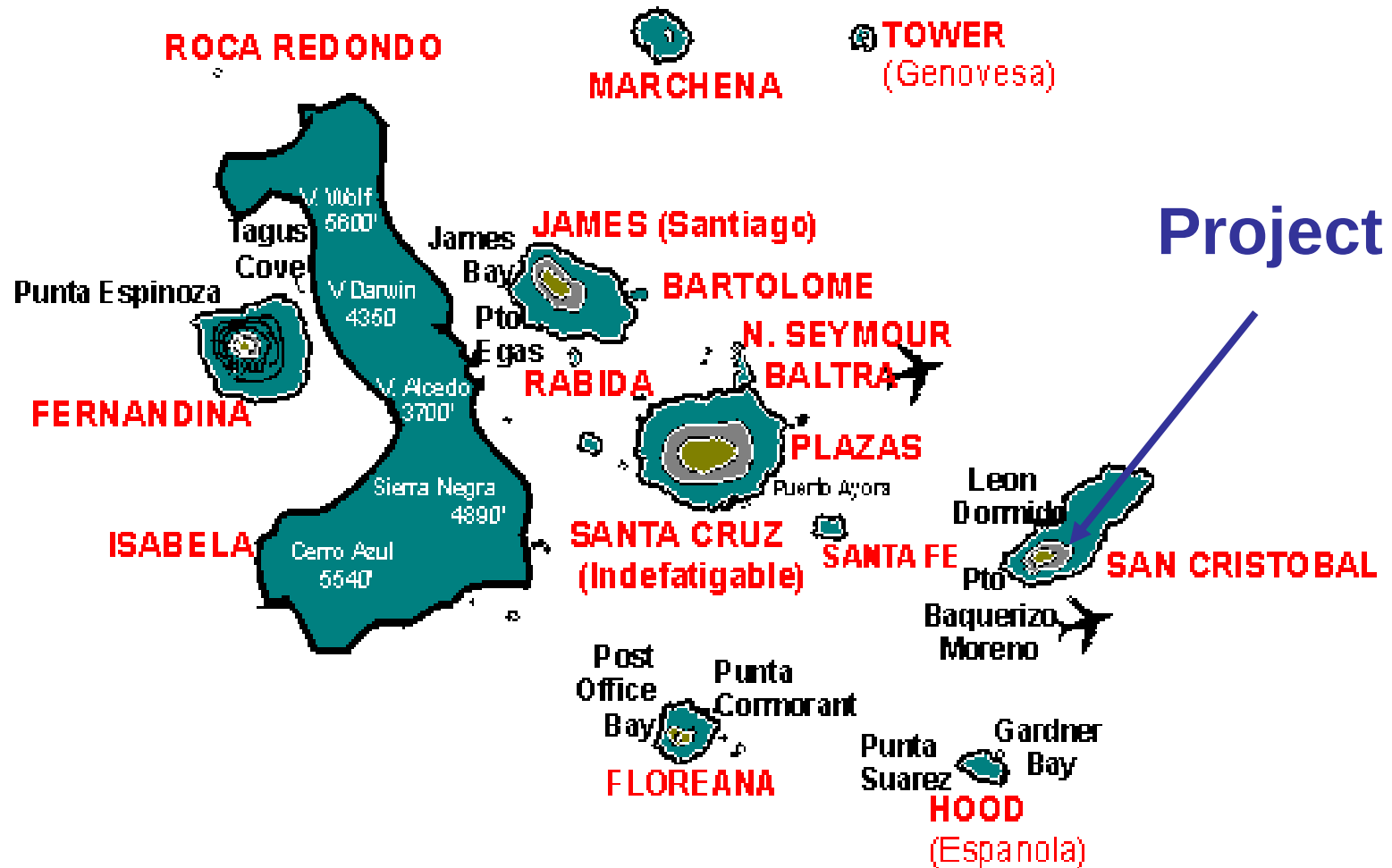
The e8 Members



Galapagos Islands Location

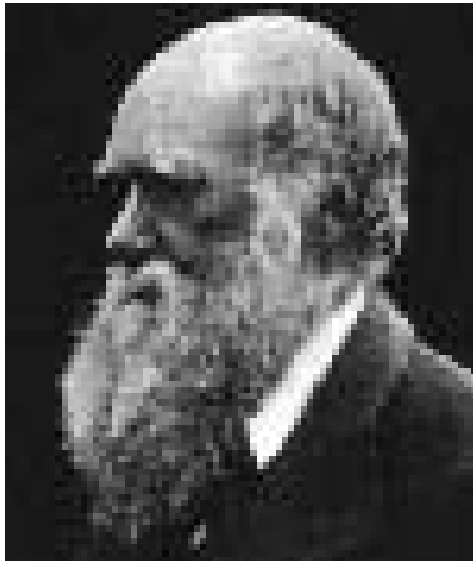


Galapagos Islands – San Cristobal



Importance of Galapagos Islands

- **Charles Darwin visits in HMS Beagle 1835**
- **Unique Endemic Flora and Fauna**
- **Declared World Heritage Site and Marine Reserve by UNP**



Wind Project – Environmentally Driven



The Jessica

2001

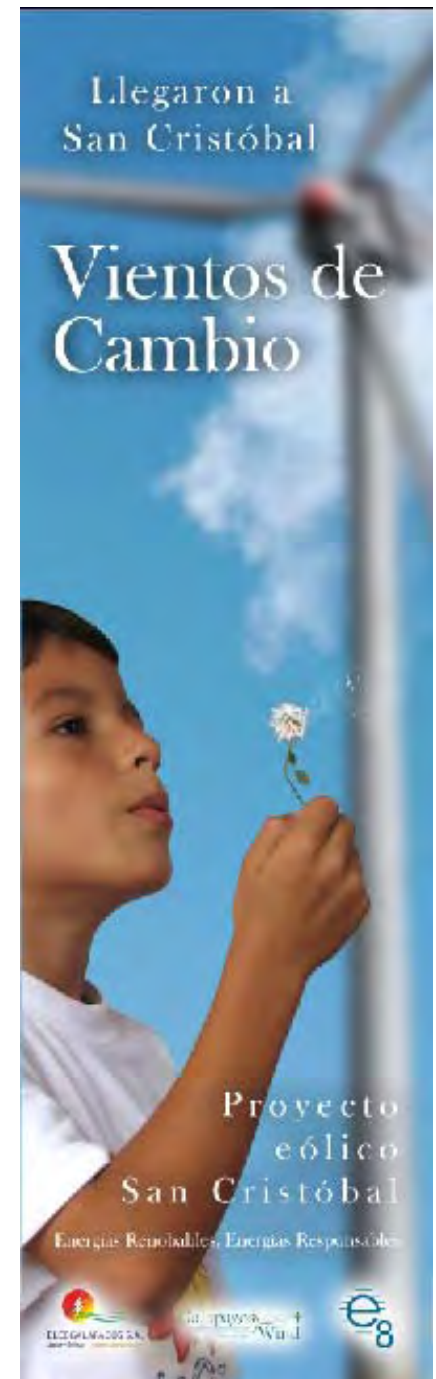
**San Cristobal Harbor,
Puerto Baqueiro Moreno**



Todd Lyons USCG

Project Process

- **Concept** **1999**
- **Pre- Feasibility Study** **2001**
- **Environmental Studies** **2002-**
- **Feasibility Study** **2005**
- **Limited Notice to Proceed** **2005**
- **Full Notice to Proceed** **2006**
- **Implementation** **2006-2007**
- **Commercial Operation** **4Q 2007**



Wind Power Project Definition

- Island population of 6,000
- 3 x 800 kW wind turbines
- 52% displacement of diesel generation
- Reduce CO₂ emissions
- Reduce oil spill risk
- \$10.5 MM Cost
- Not-for-Profit
- Funding Sources
- Commercial Trust

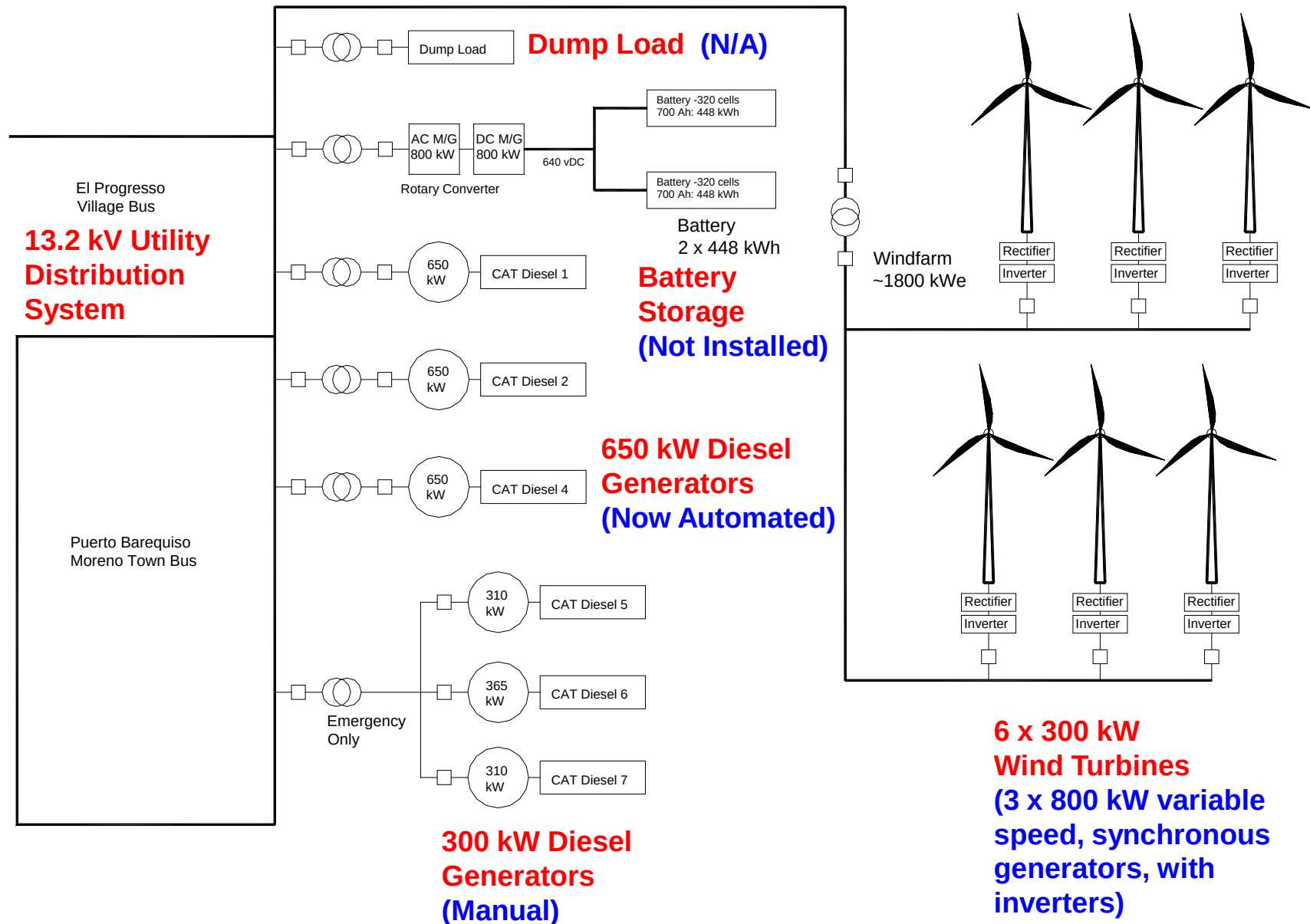


Project Elements

- **Environmental**
- **Institutional**
- **Technical**
- **Financial**



High Penetration Wind-Diesel Hybrid System



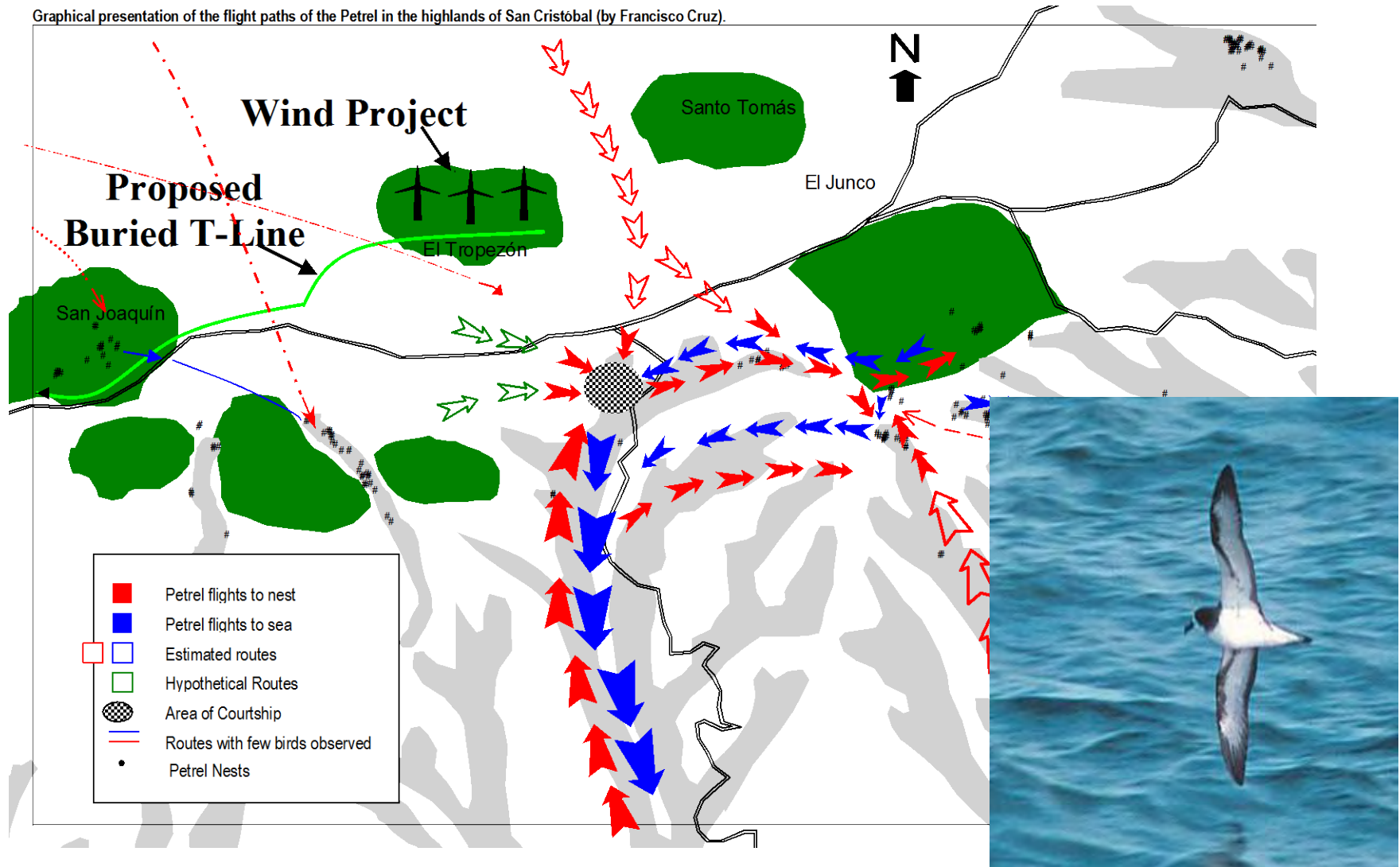


Project Challenges



Project Site is out of Galapagos Petrel Flight Paths and Nesting Areas

Graphical presentation of the flight paths of the Petrel in the highlands of San Cristóbal (by Francisco Cruz).



Wind Turbine Factory - Spain

Wind Turbine Nacelle



Factory Load / Cycle Testing



Rectifier Cabinet



Inverter Cabinet



Harmonic Filters



Wind Tower Unloading in Galapagos

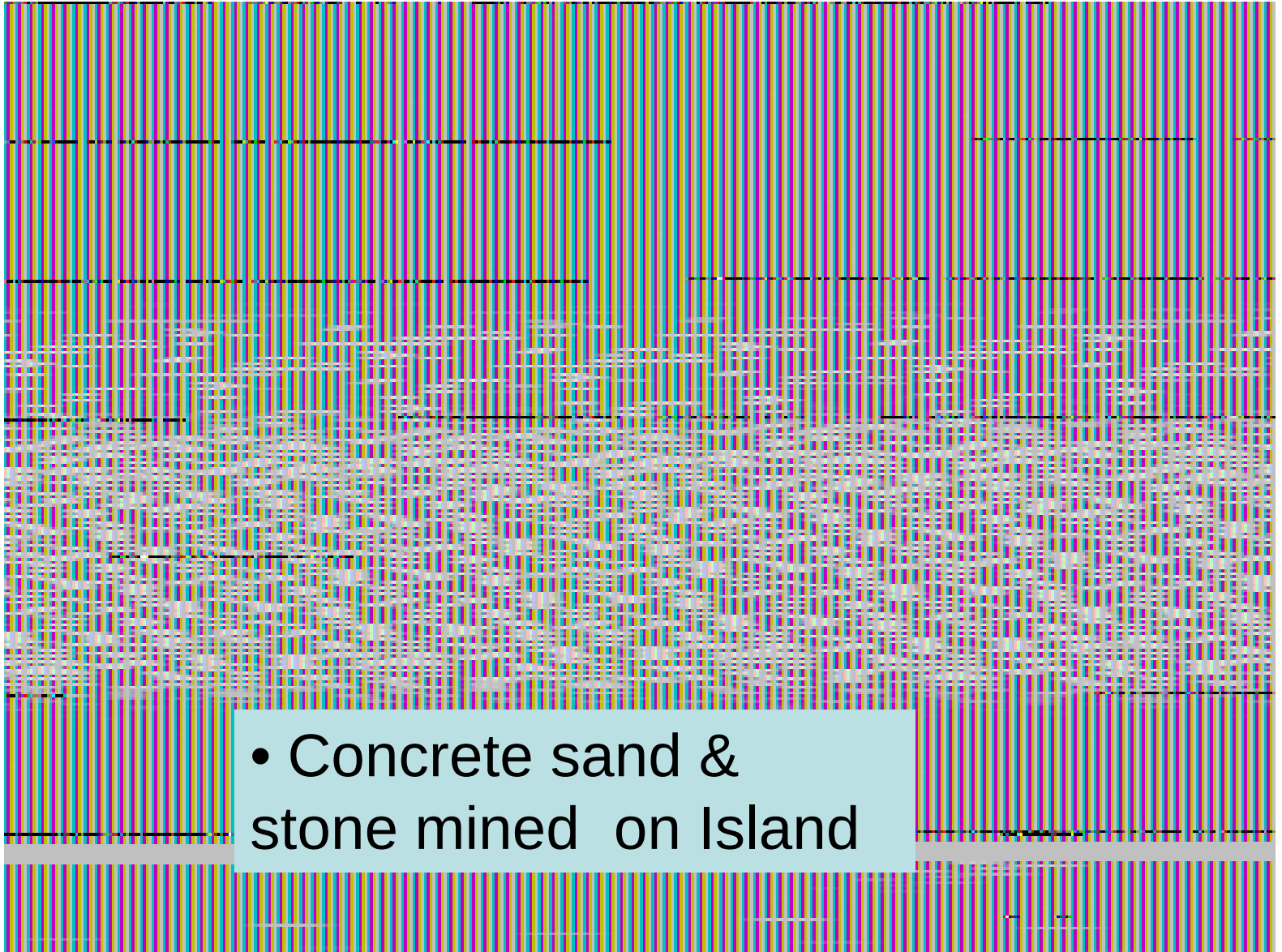


Wind Towers -
50 meters tall
Ships in two sections

Unloading area
footprint painted on
mainland lot



Wind Turbine Foundation



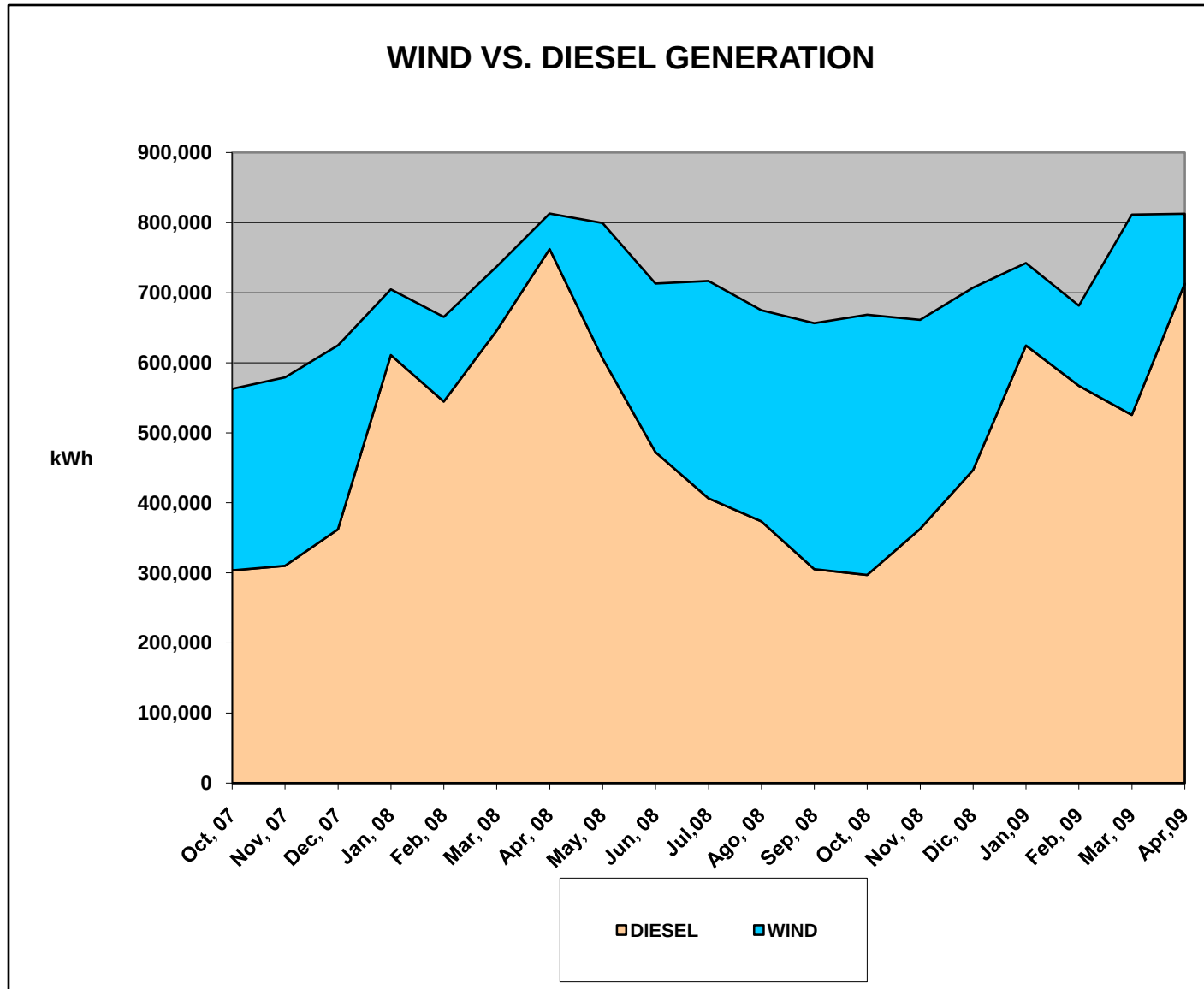
Wind Turbine Erection





**September 2007
Success !!!**

Energy to the Island



EOLICSA Staff





Thank you for
your attention

