



**The e8 San Cristobal Galapagos Wind Project:
*'Paving the way for the fossil fuel free electrification of the
Galapagos Archipelago'***



By
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2008 United Nations Climate Change Conference
COP14/MOP4, Poznan, Poland, December 8, 2008



The San Cristobal Wind Project



Project Location



- A 2.4 MW, first large-scale, wind project in the Galapagos Islands and Ecuador;
- A wind project built on a UNESCO World Heritage Site, which complements the United Nations Development Programme (UNDP) renewable energy program for the Galapagos Islands.
- One of the largest wind-diesel hybrid systems in the region, supplying an average of 50% of the island's electric needs through wind power;
- Complemented by two (2) 6 KW Solar PV systems, solar PV technical training and energy efficiency educational programmes;
- Featuring a comprehensive programme for the protection and enhancement of an endangered indigenous bird species (The Galapagos Petrel).
- Registered under the Kyoto Protocol's Clean Development Mechanism (CDM).



Project Main Objectives



- Reduce the risk of oil spills in a highly vulnerable environment;
- Reduce atmospheric fossil-fuel emissions;
- Decrease San Cristobal's dependence on diesel fuel;
- Transfer technological expertise to local electric utility from the operation and maintenance of wind-based power system on a sustained basis;
- Provide a demonstration project model for the promotion and replication of small-scale power systems;
- Contribute to the protection of a unique ecosystem and World Heritage Site
- Increase access of the local population to renewable energy;
- Develop public awareness of effective demand-side management and energy conservation practices.



Project Timeline

- **Concept** 1999
- **Pre- Feasibility Study** 2001
- **Feasibility Study** 2005
- **Limited Notice to Proceed** 2005
- **Full Notice to Proceed** 2006
- **Implementation** 2006-2007
- **Project Closeout** 2007
- **Commissioning** Oct. 2007
- **Inauguration** Mar. 2008





Key Success Factors & Lessons Learned



Project Elements

- Institutional
- Financial
- Environmental
- Technical

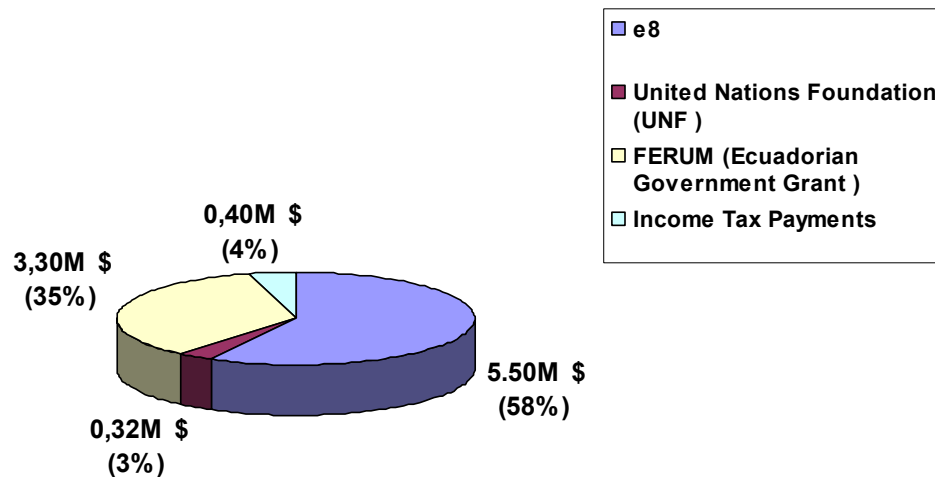




Innovative Financial Model



- **Legal structure:** Commercial Trust Fund registered in Ecuador.
- **Financial structure:** Combination of international grants (e8, UN agencies), Ecuadorian government grants and Ecuadorian taxpayers' designated income tax payment.



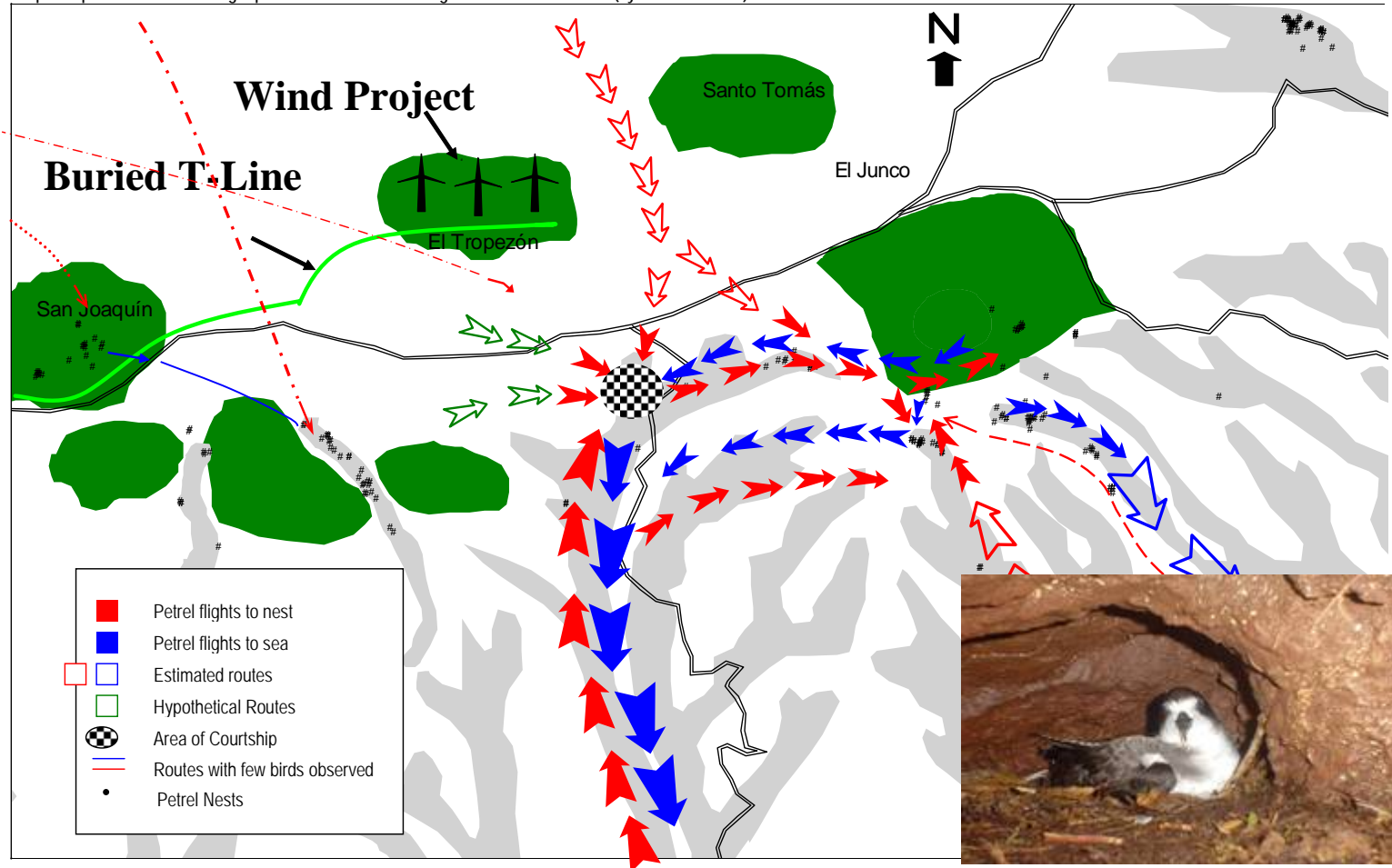


Environmental Protection



Indigenous Species Protection

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





Logistical Challenges





Innovative Aspects and Challenges



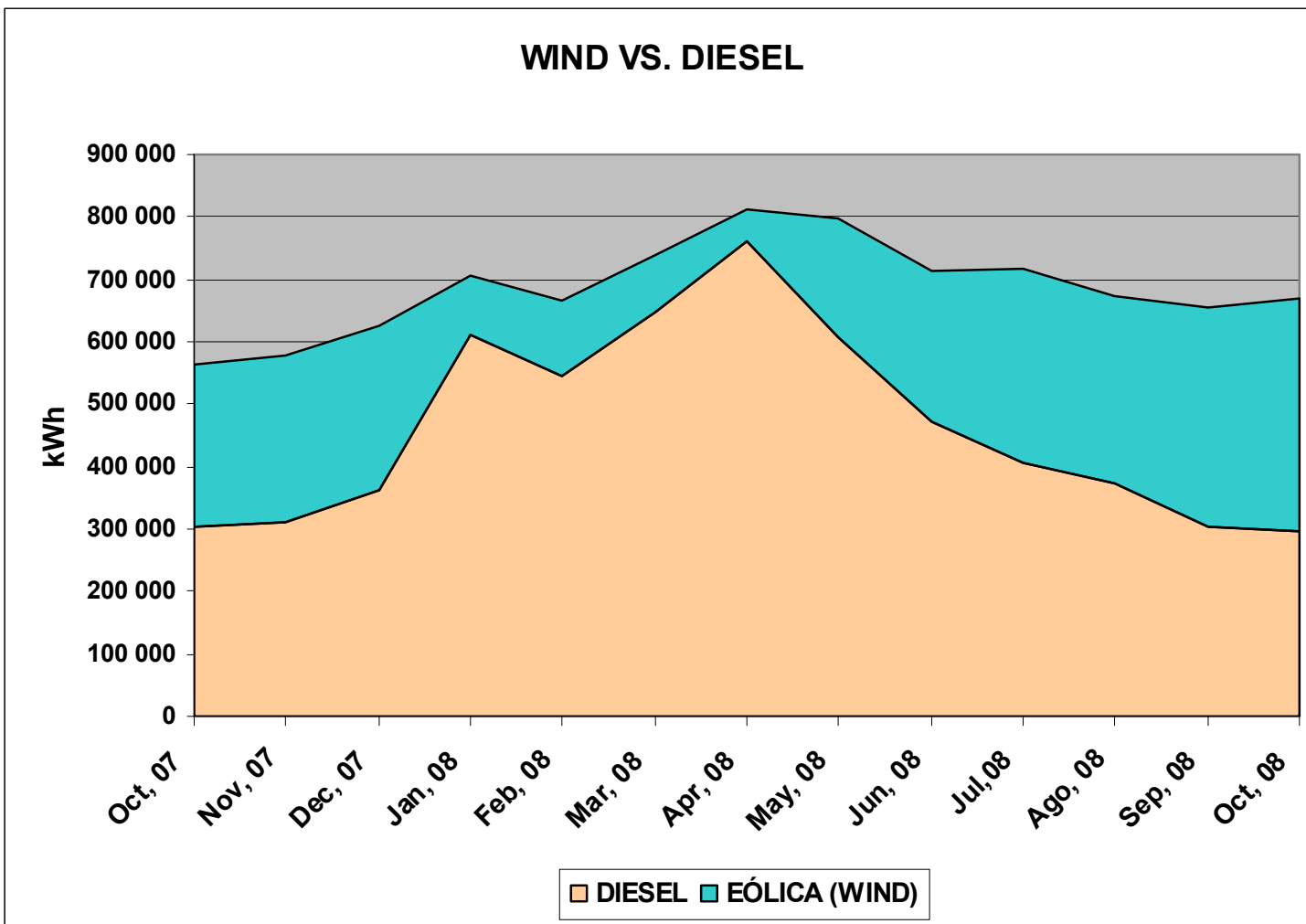
- **INNOVATION:** PPP Model-Funding from multiple sources.
CHALLENGE: Multiple accounts and reporting, cash flow difficulty.
 - **INNOVATION:** Environmental protection special programmes.
CHALLENGE: Additional responsibility, coordination and adapted timelines.
 - **INNOVATION:** Strong involvement of local partner, EEPG, provided many benefits - Generating Concession, FERUM Subsidies, Local Designated Income Tax Payments, and Land Easement.
CHALLENGE: Addressing local capacity issues and local staff availability to work on new projects.
 - **INNOVATION:** Commercial Trust Legal structure
CHALLENGE: Additional management efforts.
- **Public–Private Partnership model with strong project management, strong support within Ecuador and from UNDP were key to addressing the many unique challenges of the San Cristobal Wind Project.**



Project First Results and Success



First Year of Operation





Environmental Achievements



- Fossil fuel reduction: 700,000 litres of diesel imported.
- CO2 Emissions avoided: 2034 tons avoided during the first year:
- Petrel protection and enhancement programme: very positive results from the first year of operation.



Ecuadorian Government Commitment



- **e8 Project: A first step in Ecuador's strategy to eliminate the use of fossil fuels in the Galapagos by 2015.**



*Ecuador's President visit to the Project Site,
February 2008*



*Ecuador's Minister of Environment at the Project
Dedication Ceremony, March 2008*



Project Replicability



- The San Cristobal Wind Project model is currently being replicated on other inhabited Islands of the Archipelago.



THANK YOU

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