

CASE STUDY

# Mitigating the Impact of Drought on Energy Production in Uruguay

#### **OVERVIEW**

dependent Uruguay is highly hydropower for electricity and exposed to the risk of drought and high oil prices. The World Bank executed a \$450 million weather and oil price insurance transaction for the state-owned electric utility, which provides cost certainty to the energy company, budget stability to the government, and price stability to



consumers. This milestone transaction creates an important fiscal buffer which is part of the wider risk management strategy.

# Background

Uruguay's state-owned public electric company, Administración Nacional de Usinas y Trasmisiones Eléctricas (UTE) generates more than 80% of its energy needs from hydropower plants. When rainfall and/or accumulated water reserves is low, UTE is forced to purchase alternative fuels (mostly oil and natural gas) to use as inputs for electricity production. When the price of oil is high, generation costs become very expensive, affecting UTE's bottom line, and creating problems for both consumers and the national budget.

# Financing Objectives

In 2012, water shortages meant the company

needed to purchase other sources of energy. That year the cost of supplying demand for electricity reached a record US\$1.4 billion, far exceeding the company's original projections of \$953 million. In order to cover the gap, UTE borrowed funds from the market, drew down the country's US\$150 million Energy Stabilization Fund, and increased rates to consumers. UTE needed to manage these risks. In response to public attention on the World Bank's intermediation of a weather derivative for Malawi, the Government of Uruguay asked the World Bank for technical support to hedge UTE's financial exposure to low rainfall and high oil prices.

#### **Financial Solution**

On December 18, 2013, the World Bank executed a US\$450 million weather and oil price insurance transaction for UTE. The transaction insures the energy company for the next 18 months against drought and high oil prices. UTE's hydropower is dependent on water levels in two river systems in Uruguay and Brazil: the Rio Negro and the Rio Uruguay. To measure the extent of a drought and potential insurance payouts to the company, the transaction measures and collects daily rainfall data at 39 weather stations spread throughout the two river basins. If precipitation falls below the level set up as trigger of the contract, UTE will receive a payout of up to USD\$450 million based on the severity of the drought and oil price levels. If oil prices are high, the payout will be larger to offset the high cost of fuel purchases.

The World Bank's involvement has helped to strengthen confidence in the transaction and the data collection protocols, both of which have served to crowd in market participants. The Bank provided 1) technical support to develop a market-ready term sheet which formalizes strike levels, variables to be considered, tenors, and amounts, 2) designed a protocol for the future collection of hydrographical data through Uruguay's National Meteorological Service, which would be necessary for ongoing monitoring of the contract, and (3) provided information about legal aspects of a

weather derivative contract. The Bank also acted as UTE's counterpart for the transaction, offsetting its risk with the re-insurance companies. UTE paid a premium up-front.

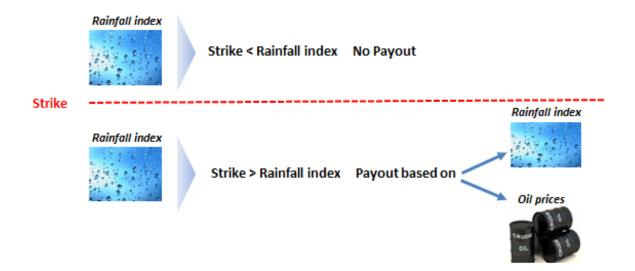
#### Outcome

This is the largest transaction in the weather risk management market and the first time that a public utility company has used this type of risk management tool. It is important to note that this contract is part of a broader legislative framework approved by the government of Uruguay to reduce UTE's vulnerabilities, including stabilization funds and contingent financing with private banks. UTE is fully committed to a national plan for reducing vulnerability in the energy sector. The World Bank's involvement in this transaction is driven by its commitment to reducing vulnerability to contingent liabilities such as natural disasters, commodity price shocks and other risks. This transaction is replicable in other countries with limited data. The World Bank can execute such transactions across sectors whether they relate to energy, agriculture or other kinds of disaster risk management— for sovereigns, sub-nationals or State-owned Enterprises in both IBRD and IDA countries.

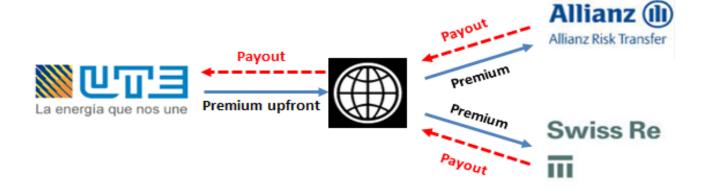
Main Terms: 2014-2015 Uruguay Weather and Oil Price Insurance	
Type of Contract	Hydropower energy index-linked weather derivative
Maximum Payout	US\$ 450 million (cumulative)
Term	18 months from Jan 1, 2014 to June 30, 2015
Weather Index	Uruguay Potential Hydropower Energy Index ("UPHEI")
Strike	Specified units of the UPHEI index
Settlement Dates	Semi-annual (for a total of 3 semesters)



## How does the weather and oil price insurance work?



## How does the transaction work?



- UTE will receive a payout from the World Bank if the weather index is below the pre-determined trigger
- The trigger was selected by UTE, based on coverage and cost considerations
- The amount of the payout depends on the level of the rainfall index and market oil prices at that time
- The World Bank entered into a mirroring agreement with Nephila/Allianz and Swiss Re and effectively transferred the risk onto these entities

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