

5-29-2008

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GUATEMALA VEERS TOWARD THE TRADITIONAL IN ITS QUEST FOR ENERGY INDEPENDENCE

Guatemala's president announced a plan to reduce the country's dependence on foreign oil. The initiative will depend instead on foreign investment, somewhere in the US\$2 billion range. President Alvaro Colom said the investment would buy the generation of more than 920 megawatts of electricity, and would permit a medium-term revamp of the country's energy mix. At present, 46% of the electricity in Guatemala comes from bunker fuel, the heavy residue at the bottom of the barrel, after gasoline and diesel have been distilled away. But even this stuff has been subject to enormous increases in price.

By medium-term, Colom meant the projects he has in mind would come on line sometime between 2010 and 2014, if they start up this year. The projects are a mix of geothermal, hydroelectric, and coal generation. Once running, oil would only contribute 5% of the electricity, 47% would come from hydro, 2% from geothermal, and 46% from coal.

Five hydroelectric plants and four thermal would come on line. Three of the latter would be coal fired. Government spokespeople have mentioned a number of possible sources of investment and foreign proposals. The only name attached to these, however, is Carlos Slim, who, were it not for Warren Buffet, would be the richest man in the world. As things stand, Slim, of Mexico, is the richest man in the neighborhood. He or any other private investor would leave between 20% and 30% of the projects under state ownership, according to Minister of Energy and Mines Carlos Meany.

The new policy represents an alternative insofar as oil consumption is concerned, and also an alternative to the revolving-door energy-source-of-the-week hype that has only recently begun to discard ethanol as the main attraction.

But that is not to say there is not a source nouveau on the horizon. A shrub that produces a highly oleaginous seed, *Jatropha curcas*, grows in Guatemala. While there hasn't been much said about it in the country recently, it has drawn the interest of Chilean researchers.

The Universidad de Chile and the Fundacion para la Inovacion Agraria have imported plantings of *Jatropha curcas* from Guatemala to evaluate its potential as a bio fuel crop, in the intensifying search for some plant that can be processed using demonstrably less energy than it yields. The candidate plant also has to be inedible and not grown on food producing lands, so as not to contribute, as do corn, sugar, grains and grasses to food shortages, malnutrition, starvation, and unaffordable food prices for the world's poor.

Jatropha curcas seems to fit the bill in a number of ways. The Chileans were drawn to the fact that the plant proliferates on eroded and desert lands. It is said to combat desertification and to slow erosion. The project, named "Desarrollo y Validacion del Cultivo de *Jatropha* en la zona norte de Chile para la Produccion de Biodiesel" will have joint public and private participation. Like Guatemala, Chile is seeking relief from energy dependency. The country

imports all its oil and gas, and has suffered losses in hydroelectric power from drought (see [NotiSur, 2004-04-30](#)).

Jatropha has drawn the attention of Goldman Sachs as a prime prospect in the search for the ideal fuel plant. It is a bush that produces pods, each of which contains three seeds. These seeds are 45% oil, more than any other plant that has ever been under discussion for this use. It is already being grown commercially for fuel in the Philippines, India, Brazil, Mali, and elsewhere. According to reports, the rail line between Mumbai and Delhi is planted with it, and the train runs partially on biodiesel from the landscaping. The plant can even be intercropped with coffee and other cash crops, but its long-term effect on soils has not yet been assessed. The oil is toxic, however.

The plant is good for other things, as well. Baskets, for instance can be woven from it, and that being the case, it is worth pointing out why Colom is not putting all, or it appears, even any of his eggs in one. The president has already seen the country go part way down the biofuel road to no avail. Just last year a Brazilian consultant was telling officials of the previous administration that "Guatemala is one of the only countries in the world with favorable conditions for introducing the use of ethanol," and that the country could become the Saudi Arabia of ethanol (see [NotiCen, 2007-04-12](#)).

The jatropha downside

Recent research is showing that jatropha's yields and potential are more likely to benefit the coffers of Goldman Sachs than the people of an energy-hungry world. In Europe, researchers have come down on BP and D1 Oils for overselling this latest wonder crop. Netherlands plant scientist Raymond Jongschaap at Wageningen University said the companies have based their estimates on 20 to 30 year-old trees, and that new plantings don't produce that way, particularly in marginal soils. "The plant will grow in marginal soils," he said. "It survives under those circumstances but it does not produce under those circumstances." In the Philippines, a government official has told Time Magazine that farmers have abandoned nurseries after struggling to get adequate yields.

D1 and BP are in a joint venture, D1-BP Fuel Crops, which had plans to plant a million hectares of jatropha by 2011, primarily in India and Africa. The company responded to the scientific criticism with a statement from a spokesman, "We have always been very conservative about the yields. I don't believe D1 has ever said jatropha is a miracle crop. We have always said it requires care, maintenance, and the application of good science. We wouldn't be doing this if we didn't believe it would work."

Even if jatropha turns out to be a good thing, it could be too much of one. It is a highly invasive species, and has recently been banned as such in two Australian states. It is a poisonous plant; if it escapes cultivations and invades pasture or croplands, it could be a disaster.

Native though it is in Guatemala, the plant could become an invasion problem. Colom may be ignoring it, but its development could become part of the landscape by other means. Colombia's Minister of Agriculture Andres Felipe Arias announced in February that his country had a biodiesel project in mind for Guatemala that would enter as part of the Proyecto Mesoamericano de Biocombustibles under the Plan Puebla Panama (PPP), the on-again off-

again regional mega project of which Colombia became part in 2006 (see [NotiCen, 2007-04-09](#)). Honduras and El Salvador would also be involved. El Salvador would have a jatropha processing plant like Guatemala, and Honduras would have one that processes palm oil. The three together would produce 10,000 liters of biodiesel daily. The investment on the part of Colombia would be small, about 3 million euro, and built by the Colombian private companies Biogeos and Imgeomega.

Since 2007, jatropha has been under local investigation for possible development. In November, the Fondo Competitivo de Desarrollo Tecnológico Agroalimentario (Agrocyt) began evaluating different samples of the plant from around the country to find the most propitious one for biofuel production. Agrocyt director Enrique Acevedo said that work would take most of 2008 to complete, but more research would follow over an additional two years prior to any commercialization. For the present, the research is aimed at local use of the oil.

Despite his best intentions, his credentials as a businessman, and his commitment to turn the lion's share of his plan to the private sector, Colom's initiative carries the taint of government. It has already drawn private sector criticism. Luis Garcia Pinot of the Asociación de Generadores de Energía Renovable approves the goal of diversification away from oil, but sees this plan as the government getting involved in the market. "It is not as simple as it seems," he said. "The state can not decide alone that it is going to invest in one energy or another. This depends on the market."

[Sources: Prensa Libre (Guatemala), 11/09/07; [www.reeep.org](#), 03/27/08; ANSA, 04/19/08; Spanish news service EFE, 04/23-25/08; New York Times, 05/21/08; Associated Press, La Jornada (Mexico), 05/25/08; [www.energycurrent.com](#), Prensa Grafica (El Salvador), 05/27/08]