



## opinion

by Milton R. Copulos

# New Oil realities



DynaMotive Energy Systems, an innovative Canadian company, converts agro-waste into fuel. The firm's technology is easily adaptable to Latin America.

Even energy-exporting countries in Latin America would be wise to adopt alternative sources of energy.

More than three decades have passed since the 1973 OPEC oil embargo first signaled an end to the era of cheap oil. Today the world oil market is entering a second period of traumatic transition. That is the advent of a permanent imbalance between supply and demand.

This shift is accompanied by another painful reality: a floor price for crude oil of at least \$55 per barrel.

For Western Hemisphere nations, this paradigm shift is a mixed blessing, creating short-term winners and losers. For producing countries like Venezuela, Mexico and Ecuador, the record high prices offer an unprecedented economic windfall. For consuming nations, they represent an unprecedented economic penalty. Yet, despite the short-term dislocations it has caused, today's skyrocketing oil prices may have opened the door for a new era of hemispheric cooperation on energy that ultimately will bring enormous benefits to producers and consumers alike.

Central to this opportunity is the fact that the current record high prices assure that a number of new energy technologies will be both economically viable and, more important, desirable.

It is obvious, given current high energy prices, that consuming nations would have an incentive to curb their oil consumption. What is not so apparent is why producing nations would want to encourage actions to constrain demand. But there are several reasons why they would – or at least should.

First, oil is a finite resource. Therefore it is in the interest of producers to manage their output in a way that maximizes long-term profits. Indeed it was this concept that moti-



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Alternative Energy Builders developed heating and cooling systems appropriate for off-the-grid communities.

vated the creation of OPEC – or for that matter, the oil regulations promulgated by the Texas Railroad Commission.

Second, there can be too much of a good thing. While today's high prices have dramatically raised producer revenues, it may not be possible to efficiently employ the cascade of additional cash. The oil industry's history is replete with examples of squandered oil wealth and the economic dislocations that followed. One need only look at countries like Nigeria, Iraq and Iran to see contemporary instances where oil revenues were lost to corruption, questionable capital spending programs or militarization.

Third, the manufacture of components for new energy conservation technologies can provide a means of creating employment outside of the extractive industries and agricultural sector.

Fourth, and finally, many of the energy conservation technologies emerging today can help to address fundamental deficiencies that exist in both oil producing and consuming nations such as electricity production.

What sorts of technologies might be appropriate for hemispheric trade?

One example is found in dramatic advances in household energy efficiency that recently

emerged in the United States. In Moline, Ill., for instance, Alternative Energy Builders has developed a home design that results in energy consumption that is 80 to 85 percent less than that of conventionally designed homes. One of the principal technologies used to achieve this dramatic efficiency improvement – geothermal heat pumps – would be particularly appropriate for Latin American countries that suffer from electricity deficits. Despite their name, geothermal heat pumps provide both heating and cooling to a structure, but use only about 10% of the electricity a conventional HVAC system would require. Moreover, since the technology has been around since the 1940s, it is well-proven and the components could easily be manufactured in Latin America.

A second technology that could readily be transferred to Latin America is a “wood to oil” process recently commercialized by a Canadian firm, DynaMotive Energy Systems of Vancouver. Their process converts waste wood, sugar cane bagasse or other agricultural products to oil with the energy content of propane. It can be used as a boiler fuel to generate electricity, or it can be upgraded to a motor fuel with further processing.

Indeed, DynaMotive is currently exploring using its technology in Brazil to process sugar

cane bagasse from fuel alcohol production.

One application for DynaMotive's technology that might be particularly well-suited to Latin America is to power distributed energy systems, which are small electric-power stations of up to 16 megawatts. Using local biomass as a feedstock, one of the processing facilities could, in combination with such a power generation station, provide enough electricity for a town of 16,000 without the need for long-distance transmission lines. If the homes and other structures used the energy-efficient design developed by Alternative Energy Builders, the power would be sufficient for 80,000 homes.

These are just two examples. Other energy-efficiency technologies that could readily be manufactured in Latin America include such things as ultra-high efficiency windows, compact fluorescent light bulbs, ERVS (Energy Recovery Ventilation Systems) and cellulose insulation.

With high oil prices here to stay, the only real constraint on what is possible is the imagination. **WC**

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