

## How do you spell Solution? R-E-N-E-W-A-B-L-E-S

*Vision of three young Tunisians on the current energy situation!*

In one of the chapters of his best-seller on Globalization - *"The Lexus & the Olive Tree"* Thomas L. Friedman, the famous New York Times Foreign Affairs Columnist wrote <sup>(1)</sup>: *"What we are going to see in the globalization system is a continuation of this trend [...], only now the differentiation is going to be increasingly within regions and within countries of the same region – as some choose prosperity, get wired, become shapers and adopt the habits of effective countries, and others do not. For instance, you will see a gap emerge in the Middle East between Tunisia – which in the 1990s put the Golden Straitjacket, signed a free-trade agreement with the European Union and adopted many of the habits of effective countries – and some of its Arab neighbors, which have not."*

As an emerging country that has managed a sustained five percent GDP growth for over three decades, Tunisia's economy is inevitably showing an increased appetite for oil and gas vital for powering its industry, transport, tourism and residential needs. According to the National Agency for Energy Conservation, the energy balance evolved since the beginning of the Nineties from a surplus situation of approximately 1.5 million MTOE to an energy deficit of 0.6 million MTOE and it is still growing. In 2004, the growth of the primary energy consumption was around an average annual rate of 4.1 percent, the own energy resources grow at the rate of only 2.4 percent per annum.

While bringing the energy balance back to the safe side is everybody's responsibility and a shared national duty, this positive shift will have to be led by highly skilled, motivated and committed individuals who can "pull the sketch out of the page" and turn their know-how into value.

Among those are Rym BAOUENDI, a consultant in Green Buildings in Montréal, Canada; Mehdi ZAHAF, a University Professor in Ontario, Canada teaching Environmental Economics and Slim MENZLI who kicked off his career as project engineer working for an oil company here in Tunisia.

*"As engineers or scholars – and therefore as driving forces for higher living standards for our people and our nation - we cannot sit idle watching out there: looking for every possible way and turning every rock to lessen this dependency is an*

*obligation and no longer an option"*, says Rym.

Attraction to Energy Engineering is no surprise to anyone. *El-Khadra* team likes to quote Paul Roberts in his book *"The End of Oil"*: *"the obsessive focus on oil is hardly surprising, given the stakes. In the fast moving world of oil politics, oil is not simply a source of world power but a medium for that power as well, a substance whose huge importance enmeshes companies, communities and entire nations in a taut global web that is sensitive to the smallest of vibrations. A single oil event - a pipeline explosion in Iraq, political unrest in Venezuela, a bellicose exchange between the Russian and Saudi oil ministers sends shockwaves through the world energy order pushes prices up or down and sets off tectonic shifts in global wealth and power"*.

Slim adds *"seeing me switching from fossil fuels to green fuels is like jumping over a high fence in a whole different world: I am committed to doing it because I am one hundred percent sure that the other side of the fence is really greener!"*

The three of them are involved in a promising project: *El-Khadra* <sup>(2)</sup>, a web site dedicated to vulgarizing Sustainable Development concepts, disseminating up-to-date environmental news and events and investigating various ways to alleviate not only the burden on the environment but also on the state and the everyday citizen's wallet by encouraging a smooth shift towards a less oil-dependant economy and a society of energy-literate people!

Renewables might be the most cost effective solutions to our energy shortage in the long run. In fact, Tunisia enjoys a sun time over five months a year! An ambitious program of promotion of the solar water-heating in the residential and tertiary sectors was launched in 1985. 70 000 m<sup>2</sup> of solar collectors have been installed so far and approximately 60 000 MTOE of cumulated energy savings over the period 2002-2006 are expected. Photovoltaics are also of interest and development of uses of solar energy such as street lighting, pumping and desalination of water is also possible and worth the investments. Tunisia has also long shores for prospective hydraulic and wind energy. Another program had been launched aiming at adding up a wind power of 300 MW including 100 MW in a first phase. The elaboration of a detailed wind map is underway with the help of experts from Spain.

The trickiest part now is to find out how to get more and enough grants to fund such cash-absorbing projects. Obviously, front costs are the main hurdle but all will be paid back in the medium term. Huge savings will be reaped over a project life cycle cost with the oil barrel hitting the \$72 line. Tunisia might be one day *the Denmark of Africa*.

But pursuing aggressively an energy policy of conservation besides that of generation is a must-do task in the context of the energy bottleneck the world is going through right now, Tunisia being no exception.

*“Luckily we have a legacy that abounds with our ancestors’ genius in the field of energy efficiency”* says El-Khadra team *“just look at those troglodytes in Matmata or those skylights in the old baths just to name a few, we believe it’s both a duty and an impetus to continue that legacy and add to it with what today’s technology can bring.”*

*Slim*, being the youngest of the three, thinks he might still need some more training to reinforce his technical know-how and experience in the field of green energy. An alumnus of the prestigious *L’Ecole Polytechnique de Tunisie* (Tunisia Polytechnic School) in *La Marsa*, he obviously has a good launch pad to seek the *cutting-edge* in the field.

As an engineer, he likes to understand the nuts and bolts of everything he steps into and so he believes that some further academic studies will be much worthwhile. *“Since my vision is an applied industry-oriented one rather than research-oriented, a master program in building systems and renewable energy would be just the right thing for me.”*

Big chances are that *Slim* will be awarded the prestigious Fulbright scholarship this year to go for a master’s degree in the field of Green Energy in an American University. This will undoubtedly give

him an invaluable hands-on experience as well as an edge to later transfer some state-of-the-art technological advancements in this field to his homeland.

*Slim’s* ultimate goal is to found a thriving and growing business starting in Tunisia and then moving on to the whole MENA region in the field of energy management, a knowledge-based business where value is added by the most valuable asset: *People* he says. He is thinking of an energy audit firm after having been keeping a close eye on the Tunisian government energy policy during the last couple of years, the legal texts promulgated and the incentives offered.

*Mehdi* points out that entrepreneurship in the field of energy management and renewable energy should be very encouraged by granting some large fiscal privileges to young Tunisian entrepreneurs as well as offering quality trainings and looking for international cooperations all the time.

So far, many positive measures have been taken and further efforts have to be deployed to reinforce this trend towards a less oil-dependant economy. With the Kyoto convention having already entered into effect in 2005, an increasing public awareness about the environment but more importantly our national energy policy witnessing deep but positive changes, there are few reasons why *Slim* and his peers should dither about pursuing a career in green energy.

Let us end here just as we started: by quote from a book ‘The Future of Life’ by Edward O. Wilson *“We have entered the century of the Environment, in which the immediate future is usefully conceived as a bottleneck: science and technology, combined with foresight and moral courage, must see us through it and out”*.

We hope that through their quest for a truly greener Tunisia, *El Khadra* team and its peers will be gaining both knowledge and courage!

(1) Chapter XI, “Buy Taiwan, Hold Italy, Sell France” p.212

(2) Million Tons of Oil Equivalent

(3) [www.el-khadra.net](http://www.el-khadra.net)