

*Commentary – partly published by Cyprus Mail on 5.10.2014:*

## **Are the Gas Findings a Blessing for Cyprus?**

*by Christian Bauer*

Being advocates and consultants in Renewable Energies based in Vienna, Austria, we received a Saudi Arabian delegation, interested in the topic of Renewables some time ago. Particularly interesting was that this group came from Saudi Aramco, the single biggest oil exploration and exploitation company worldwide. After some presentations I cautiously asked the imminent question we all had in mind: “Why would the world’s largest oil company be interested in Renewables?” I asked.

They frankly said: “Research in the topic showed that if Saudi Arabia continues to grow in people and in energy demand following the latest trends, we will have to use all our oil in 30 years for our own population. To avoid this, we have to save energy and find new energy forms.” Interesting situation and an unexpected move from a conservative country, we found.

This is interesting for several reasons: It was economic reasons to reorient, not environmental or ethical reasons. Renewables are considered as a relevant business factor, also for Saudi Aramco and those economic reasons are in line with environmental interests.

### *Energy Use on Cyprus*

Looking at Cyprus, there isn’t a very bright history of energy use: According to the US Energy Information Administration<sup>1</sup> Cyprus consumes an equivalent of approx. of 60.000 oil barrels per day (in 2012). Cyprus’ only oil refinery closed in 2004, ending the country’s ability to produce refined petroleum products for the domestic market. Cyprus now imports all of its petroleum products to meet internal demand, with residual fuel oil and distillate fuel oil comprising approximately 65% of all petroleum imports in 2012.

Those fuel purchases amount for an approx. 20% of value of all imports and amount for EUR 1,2 billion a year. Cyprus is almost totally dependent on oil imports for its energy mix, with a small but growing contribution from renewable energy<sup>3</sup>. Syria and Russia are the major fuel suppliers. Electricity generation, based exclusively on diesel and heavy fuel, has been growing significantly in recent years, following the increasing trend demonstrated by final energy consumption. Oil products account for an approx. of 95% in the energy supply and as a result of the high import costs of petroleum products, consumers in Cyprus pay the highest prices for electricity in the European Union.

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<sup>1</sup> <http://www.eia.gov/>

<sup>2</sup> <http://www.eia.gov/countries/country-data.cfm?fips=cy>

<sup>3</sup> [http://ec.europa.eu/energy/energy\\_policy/doc/factsheets/mix/mix\\_cy\\_en.pdf](http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_cy_en.pdf)

## *The Accident*

Then things got ugly when the “Evangelos Florakis Naval Base” exploded in 2011 due to a scandalous storage of weapons (a confiscated Syrian weapons delivery stored on Cyprus as the ship had a Cypriot flag), killing 13 people and injuring another 62. The explosion was so intense, that it destroyed the nearby diesel-based power plant, supplying 60% of the island’s electricity capacity. This caused blackouts on Cyprus and the total repair costs, according to the Electricity Authority of Cyprus, amounted to EUR 160 million between 2011 and 2013. This led to surcharges on electricity payments just as Cyprus was entering a long recession.

As we will discuss later, would this (energy plant explosion and blackouts) never have happened with Renewables and with a decentralised energy supply system. Knowing this, it is not without irony, that the European Union has sued Cyprus at the European Court of Justice, for failing to fulfil EU rules, in this case the Renewable Energy Directive, which aims at ensuring a 20% share of renewable energy in the EU by 2020. Cyprus was fined to pay a EUR 11.400,- per day<sup>4</sup> for the lack of progress in adapting Renewables.

## *Oil, Oil, Oil and the Sixth Mass Extinction*

Let’s have a look on how the above mentioned oil (60.000 barrels of oil equivalent a day) get to Cyprus: The oil is being searched (with many unsuccessful attempts), exploited and processed somewhere in the world in a dirty way, with lots of spills and losses, stored there, put on a large ship, transported long routes, pumped into some depot in Piraeus, then pumped again onto a ship and then it reaches finally an oil depot on Cyprus. Every of those steps is dirty, connected with spills and losses. Every single (!) drop spilled, can destroy one cubic meter of drinking water. But it is not single drops which are lost in this process, unfortunately. Finally the oil is in the power plant, burned, creating lots of CO<sub>2</sub> plus side products (incl. fine dust and carcinogenetic substances) and a giant big Carbon Footstep.

Oil and other fossil energy forms are the single biggest reason for climate change and global warming. We have now went beyond the feared 400 ppm barrier of CO<sub>2</sub>, meaning that never before in human history did we have so much CO<sub>2</sub> in our atmosphere and the saturation is quickly growing. The original goal of the Kyoto protocol, to stay within a temperature increase of a maximum of 2 degrees, will soon and much earlier as predicted, be lost. So there are more and more people already talking about a “Sixth Mass Extinction”, we are in, as it is clear that we will surpass Kyoto’s goal clearly. Going beyond the 2 degree, means we will loose the type of life we are used to (to formulate this in the most polite way).

This planet has so far experienced 5 giant mass extinctions, the last one dating back an approx. 65 million years, very well known for the extinction of the dinosaurs. But it was not only the dinosaurs dying, it was an estimated 85% of all species living then, to die. This was an apocalypse of unimaginable scope and this mass extinction came with a CO<sub>2</sub> level of around 800 ppm. The situation we are getting into is so dramatic, that environmental pioneers like James Lovelock (the inventor of the Gaia hypothesis, among others) believes,

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<sup>4</sup> [http://europa.eu/rapid/press-release\\_IP-13-259\\_en.htm](http://europa.eu/rapid/press-release_IP-13-259_en.htm)

that we have about 20 years left, living the life we know so far. He is telling us: "The party is over in 20 years. Prepare yourselves."<sup>5</sup>

### *Resource Wars*

But oil is the cause of many more disgusting things. Most wars on this planet are about oil and resources. The invasion of Iraq among others, with burning whole oil fields in Kuwait, darkening the skies with big black clouds of burned oil, are pictures we have kept in mind. The current crisis in the Ukraine and the Crimea peninsula are partly about gas and Russia is openly blackmailing the Ukraine with price increases and threats to stop delivering gas. The last complete embargo Russians happened in January 2009 and caused for e.g. Vienna, Austria, an effective 2 month long (it was winter!) complete gas embargo and caused dramatic situations in Romania, Bulgaria and some other countries with small gas reserves, who had to shut down parts of their industry<sup>6</sup>. This conflict only was because the Ukraine didn't pay all their gas bills and Russia showed the world what happens, if you don't follow their rules.

### *Health, Pimps, Hookers and Drugs*

But oil is directly and indirectly also responsible for many health issues: A recent study indicated that there are a USD 120 billion of health costs in the US that can be directly related to burning fossils<sup>7</sup> and this is no surprise. If you pump poison into the atmosphere, what else can you expect?

So being dependent on fossil energies is a bit like being addicted to drugs. One merciless rule in this game is, that the drug dealer has a high interest in having dependent people. Larger parts of prostitution works like this: The pimp is giving drugs to his ladies, they get dependent on it, cannot live without it any more and have to follow the rules of the pimp. Pretty much the same is the situation with oil.

### *Happy End with Gas?*

But things even got more intense and the cards in the energy game got a fresh re-shuffle: In 2011, US company Noble Energy discovered natural gas what they called the "Aphrodite field<sup>8</sup>" south of Cyprus. Estimates indicate that the field contains 5 trillion cubic feet with a approximate gross value (before extraction and processing costs) between USD 60 and USD 80 billion. The government's share is estimated at between USD 12 billion and USD 18 billion (between EUR 8.8 billion and EUR 13.2 billion), which is a share of approx. of 20%.

Whereas the split between Noble and the government after costs is not known as it is confidential, as far as research showed. One could ask the question here, why a public project, funded with public money can be confidential? Why should the Cypriote taxpayer not know what its government is doing? Is there something to hide?

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<sup>5</sup> <http://www.theguardian.com/theguardian/2008/mar/01/scienceofclimatechange.climatechange>

<sup>6</sup> [https://en.wikipedia.org/wiki/Russia%E2%80%93Ukraine\\_gas\\_disputes](https://en.wikipedia.org/wiki/Russia%E2%80%93Ukraine_gas_disputes)

<sup>7</sup> [http://www.nytimes.com/2009/10/20/science/earth/20fossil.html?\\_r=0](http://www.nytimes.com/2009/10/20/science/earth/20fossil.html?_r=0)

<sup>8</sup> [https://en.wikipedia.org/wiki/Aphrodite\\_gas\\_field](https://en.wikipedia.org/wiki/Aphrodite_gas_field)

But let's put this into perspective: If we use the average estimated value of EUR 11 billion this is about 2/3 of the Cyprus yearly gross domestic product (EUR 17 billion)<sup>9</sup> and more than half the size of the accumulated debt of Cyprus<sup>10</sup>. So this is a nice additional income, but this is not sustainably solving the problems Cyprus has! Exploiting the gas field finally is a risky, long, dirty and environmentally disastrous process, with many side effects to the environment. The drilling seems to take place in great depths which comes with high risk to the environment.

### *The US Involvement – Blessing or Curse?*

The sudden involvement of the US government is neither about “helping” nor first hand about the unification. It is firstly, to secure interests of US corporations, who started exploiting gas in the Aphrodite field, to avoid any foul play with them, avoid any involvement of other parties like the Russians (who control the Cyprus banking sector and would want to sell gas in their own pipelines) and keep the Turks – who have openly threatened Cyprus<sup>11</sup> - silent. Among the illustrious group of US companies will be Noble Energy<sup>12</sup> and infamous<sup>13</sup> Halliburton<sup>14</sup>, known among others, for spilling the Gulf of Mexico<sup>15</sup>. Halliburton not only produced one of the largest oil-spills ever, but they were fined in court, for trying to cover things up, bribery and silencing critical voices.

Secondly it might have a military aspect, given that the US government wanted to attack Syria just recently. The US government has enough military bases<sup>16</sup> in Turkey and Iraq, but in a possible war involvement, it is always good to secure support and allow the many logistic aspects, required by wars.

And thirdly and most interesting of all there is high proximity to Israel, one of the closest US allies, who is surrounded by enemies and wants to export its own natural gas through a save gas pipeline, running through Cyprus<sup>17</sup>. Maybe this was the real reason, for the “great honour” of Vice-President Biden visiting Cyprus in May 2014. There was some speculation as well, that the current attacks and bombings between Israel and Palestine, are connected to the offshore gas fields, in which not only Cyprus and Israel own parts of, but also Palestina, meaning trouble ahead. The unification talks are possibly a of door opener, justify an increased military presence of the US on Cyprus.

### *What Can Renewables Do for Cyprus?*

For a moment, let's paint a possible, but currently fictional picture of Cyprus in the future:

A substantial part of the sales of the gas is reinvested into establishing Renewables onto the island. The government offers strong investment incentives to the citizen by offering financial support to home owners as well as to power plant builders. Foreign Direct

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<sup>9</sup> <https://en.wikipedia.org/wiki/Cyprus#Economy>

<sup>10</sup> [https://en.wikipedia.org/wiki/2012%E2%80%9313\\_Cypriot\\_financial\\_crisis](https://en.wikipedia.org/wiki/2012%E2%80%9313_Cypriot_financial_crisis)

<sup>11</sup> <http://www.businessweek.com/news/2011-09-22/erdogan-threatens-blacklist-for-oil-firms-drilling-in-cyprus.html>

<sup>12</sup> [https://en.wikipedia.org/wiki/Noble\\_Energy](https://en.wikipedia.org/wiki/Noble_Energy)

<sup>13</sup> <http://www.halliburtonwatch.org/>

<sup>14</sup> <http://www.naturalgaseurope.com/halliburtons-interest-in-cyprus>

<sup>15</sup> [http://www.blacklistednews.com/Halliburton\\_Pleads\\_Guilty\\_to\\_Destroying\\_Evidence\\_in\\_Gulf\\_Disaster/28995/0/38/38/Y/M.html](http://www.blacklistednews.com/Halliburton_Pleads_Guilty_to_Destroying_Evidence_in_Gulf_Disaster/28995/0/38/38/Y/M.html)

<sup>16</sup> [http://www.bibliotecapleyades.net/imagenes\\_sociopol/globalmilitarism58\\_14.jpg](http://www.bibliotecapleyades.net/imagenes_sociopol/globalmilitarism58_14.jpg)

<sup>17</sup> [http://www.aydinlikdaily.com/Detail/US-Energy-Company-Noble-Negotiates-Turkey-And-Israel/3046#.U30WG\\_1\\_t8M](http://www.aydinlikdaily.com/Detail/US-Energy-Company-Noble-Negotiates-Turkey-And-Israel/3046#.U30WG_1_t8M)

Investments (FDI) into Renewables are strongly encouraged, causing international money and know-how to come to Cyprus. Education in Renewables and energy savings options are part of education in schools and other educational areas. Research and development focuses more and more on Renewables and a large work force in smaller and medium sized companies are transforming the energy landscape of the country. Cypriot know-how is being exported.

The types of energy forms that grow are solar thermic, photovoltaic, wind, biomass and maybe geothermic. All those energy forms are existing on Cyprus in abundance. It is simply there. Nothing has to be “purchased”. Cyprus is one of the sunniest places in Europe, wind is not so strong, but strong enough to run wind turbines, instead of throwing biomass into the ocean and senselessly burning it on the fields, it is used to create energy, fertilizers and others.

Also the water situation on Cyprus will improve: Caloric power plants are very water demanding<sup>18</sup>. Every Megawatthour needs an approx. of 3.850 liters of water. In 2011 a 4,5 billion kW/h of electricity were produced on Cyprus<sup>19</sup>, requiring about 17 billion liters of water. This is, related to the population of 1,2 million, some 14.000 liters of water per person, or a consumption of 40 liters a day per person, which is a smaller bathtub. A very substantial amount to waste for an island with water problems.

Saving the yearly EUR 1,2 billion for petroleum, product purchases offers a completely new life on Cyprus: After decades of oil-addiction, life becomes better. Cyprus is not importing any more, but exporting not only energy, but also the know-how and specialised workers to other places, that were not so innovative in it’s energy transformation. Biomass is partly being burned (at very high temperature and pressure, causing substances to disintegrate into types of gas), such a burner could also be used to burn plastic trash, swimming in the ocean and aggregating in bays and on shore. As plastic trash then is another raw material, it makes sense for the government to pay for collecting the plastic. This will motivate individuals and little companies collecting it, so the plastic will vanish. The island becomes cleaner. The air as well as beaches and oceans.

As electricity becomes cheaper (and oil globally more expensive), first electro-mobility (Emobility) will come to Cyprus. As the electricity produced from Renewables is emission free, this mobility is emission free as well. Home systems of electric-car owners will be chosen to be slightly over-dimensioned, to offer reserves for Emobility. The kids will have Escooters and the family car will be also electric, all of them being charged overnight. Electric car owners can make contracts with one of the power utilities to offer the large car battery, for engery exchange and energy storage. The collective of all electric cars (which are not in use) earn money then, as they fulfil an important function of energy storage. Mobility, while expensive before, will become another abundant thing. And this is not only with scooters, bikes and cars. Soon first electric engines for boats will show up. All this will again not only reduce emissions further, but it will make our streets and cities less noisy, as electro engines are wonderfully silent.

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<sup>18</sup> <http://www.kcet.org/news/rewire/solar/fact-check-how-much-water-does-solar-power-really-use.html>

<sup>19</sup> <http://www.eia.gov/countries/country-data.cfm?fips=cy>

As Cyprus becomes a role model in Renewables, this will increase tourism. People come, because they like being in a clean environment or maybe they come, in the hope to learn more, how to live in a new and sustainable way. The world would start perceiving different news from Cyprus. It is not about the unfortunate past and the unsecure future any more, being a British protectorate and slipping into gruesome old atrocities between the Greek and Turkish ethnicities dependent on the political interest of the big brothers Turkey and Greece.

The savings of 20% of imports (the EUR 1,2 billion), in combination with the positive impetus onto the local economy, a decrease in energy costs, the increase in Tourism and the resulting decrease in unemployment, will make life on Cyprus very nice. The world would love to hear about such a man-made paradise.

### *Faith of the Fossile and Atomic Companies*

Such a scenario however would cause dramatic changes to the polluters. Most companies involved with oil business will not survive. This is not a bad thing, as they would die earlier or later anyhow and it is a cleaning process, getting rid of the dirt. Not a bad thing, particularly as we know that the Renewables offer more and much healthier jobs anyhow<sup>20</sup>. The main reason for their extinction is simply, that electricity created by Renewables is cheaper: Even without support through funding, Renewables have already proven they can produce cheaper electricity<sup>21</sup>.

So if we talk about the death of the fossile industry, it is interesting to follow patterns, accompanying such processes. According to the research of psychiatrist Elisabeth Kübler-Ross, who accompanied and followed people in their grieving process, she identified 5 significant phases: 1. Denial, 2. Anger, 3. Bargaining, 4. Depression and 5. Acceptance.

My impression is that most fossil or atomic corporations are between phases 2 and 3. We are experiencing globally, that the fossil and atomic industry is heavily fighting against the Renewables and in e.g. Germany, the doomed atomic industry<sup>22</sup> is trying to negotiate favourable types of exits currently (this is the “bargaining” phase), by trying to get large payments and a transfer of all risks related to the radiating atomic trash they have produced for us and our children and another thousands of generations, to the German citizens (all this after earnings in the range of hundreds of billions of Euro and more)<sup>23</sup>.

### *The “Corrupt Old Men” Theory*

Now, coming back into the harsh reality, the single most important question of the intelligent reader might come up: “Why is this so?” A good question. Without going into detail, the answer is that the combination of being dependent on oil, the decision making of top-politicians and the high amounts of money involved, create a very unfortunate situation, with conflicts of interest and most likely bribery involved. I would call this the “Corrupt Old Men” theory or problem. If we assume there is evidence for “Corrupt Old Men”, we also know, that they will never change and most importantly, they cannot change! Every change in

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<sup>20</sup> <http://www.worldwatch.org/node/5404>

<sup>21</sup> <http://www.treehugger.com/renewable-energy/solar-power-cheaper-natural-gas-coal-and-nuclear-power-texas.html>

<sup>22</sup> [https://en.wikipedia.org/wiki/Nuclear\\_power\\_in\\_Germany#Closures\\_and\\_phase-out](https://en.wikipedia.org/wiki/Nuclear_power_in_Germany#Closures_and_phase-out)

<sup>23</sup> <http://www.ft.com/cms/s/0/49c5b222-d926-11e3-837f-00144feabdc0.html#axzz32e3EdAIG>

the system is a threat to those people. Things could come out. No matter if it is wrong decisions, bad forecasts, acceptance of favours or in the last extend, bribery.

So knowing, that this system will not be changed by the establishment or their leaders, there is only one hope left for change: The citizens. The citizen of Cyprus have to stand up, against the "Corrupt Old Men", to change things. We have seen movements like Occupy, that stood against injustice and inequality, we saw the Pirates-Movement in Germany, Beppe Grillo in Italy and others, who changed systems, sometimes where we would never have expected this.

We red above that a country like Saudi Arabia, as well as the largest oil company are changing, as they have seen the signs of time. If Cyprus is now till some degree "gas rich", the "gas card" has to be played smart.

### *Conclusion*

Cyprus has manoeuvred itself into a unfortunate situation in it's energy policy and beyond. Instead of using the abundance in sun, wind and biomass, is it dependent to 98% on oil imports and had to face a catastrophic incident, when the main oil power plant exploded. This has killed people, caused dramatic costs and blackouts. Something that would have never happened in a distributed Renewables situation, as Renewable power plants don't burn and the resilience of decentralised energy supply would have helped. All this came in connection with problems in the banking sector. Dubious activities, directed by foreign billionaires, contributed to a situation that Cyprus finally had to seek for support from the European Union.

The collective EUR 1,5 billion invested into a) first building and then b) repairing the oil power plant would have been enough to supply most of the island with Renewables. Instead, the Cypriote government decided to go the dirty, fossil way, putting a big burden onto the shoulders of their citizens and future generations, costing the island some EUR 1,2 billion every year, not including related health care and environmental issues.

Now a second chance is coming, something very rare in life: Income from the gas findings could be used to transform the island creating a sustainable energy situation, becoming independent from oil and use the new wealth to support life and reduce debt. This second chance however has to be seen and understood by all citizens, resulting in respective actions, that is, making pressure, so that politics in Cyprus can change.

The gas deal with Noble Energy should be made public and possibly be re-evaluated from independent experts. Cyprus should seek support from the European Commission, the only organisation who would act in support to Cyprus, that is not controlled by the US, to get a better share out of the deal, then just an estimated poor 20% (while carrying all or most of the risks). Halliburton has shown sufficiently in the Gulf of Mexico, that there is reason, to worry about this.

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get a better share out of the deal, then just a poor 20%, while ultimately carrying all or most of the risks of deep sea drilling.

The people of Cyprus have to finally wake up and set action against this unfortunate situation and against the “Corrupt Old Men” to a new level in sustainable thinking: “A society grows great, when old men plant trees whose shade they know they shall never sit in.” – a Greek Proverb.

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