Desertec: the renewable energy grab?[1]

Hamza Hamouchene is an Algerian campaigner, writer, researcher and a founding member of Algeria Solidarity Campaign (ASC), and Environmental Justice North Africa (EJNA), London-based organisations campaigning for peaceful democratic change in Algeria and for environmental and climate justice in North Africa respectively.

A plan to power Europe from Saharan solar projects seems to have stalled, but several large North African solar plans are still going ahead despite local concerns. Hamza Hamouchene asks, "Where did the Desertec project go wrong, and can desert solar power still play a role in a democratic and sustainable future?"

If you use social media, you may well have seen a graphic going around (see image below) showing a tiny square in the Sahara desert with the caption, "This much solar power in the Sahara would provide enough energy for the whole world!" Can this really be true? It is based on data from a research thesis written by Nadine May in 2005 for the Technical University of Braunschweig in Germany.

According to May, an area of 3.49 million km² is potentially available for concentrating solar power (CSP) plants in the North African countries of Morocco, Algeria, Tunisia, Libya and Egypt. She argues that an area of 254 km x 254 km (the biggest box in the figure) would be enough to meet the total electricity demands of the world. The amount of electricity needed by the EU-25 states could be produced on an area of 110 km x 110 km (assuming the solar collectors could capture 100% of the energy). A more realistic estimation by the Land Art Generator Initiative assumed a 20% capture rate and put forward an area approximately eight times bigger than the May study for meeting the world's energy needs. Nevertheless, the map below is a good illustration of the solar power potential and how little space would be needed to power the entire planet.

This is not a new idea. Back in 1913, the American engineer Frank Shuman presented plans for the world's first solar thermal power station for Egypt's colonial elite, including the British consul-general Lord Kitchener. The power station would have pumped water from the Nile River to the adjacent fields where Egypt's lucrative cotton crop was grown, but the outbreak of the First World War abruptly ended this dream.

The idea was explored again in the 1980s by German particle physicist Gerhard Knies who was the first person to estimate how much solar energy was required to meet humanity's demand for electricity. In 1986, in

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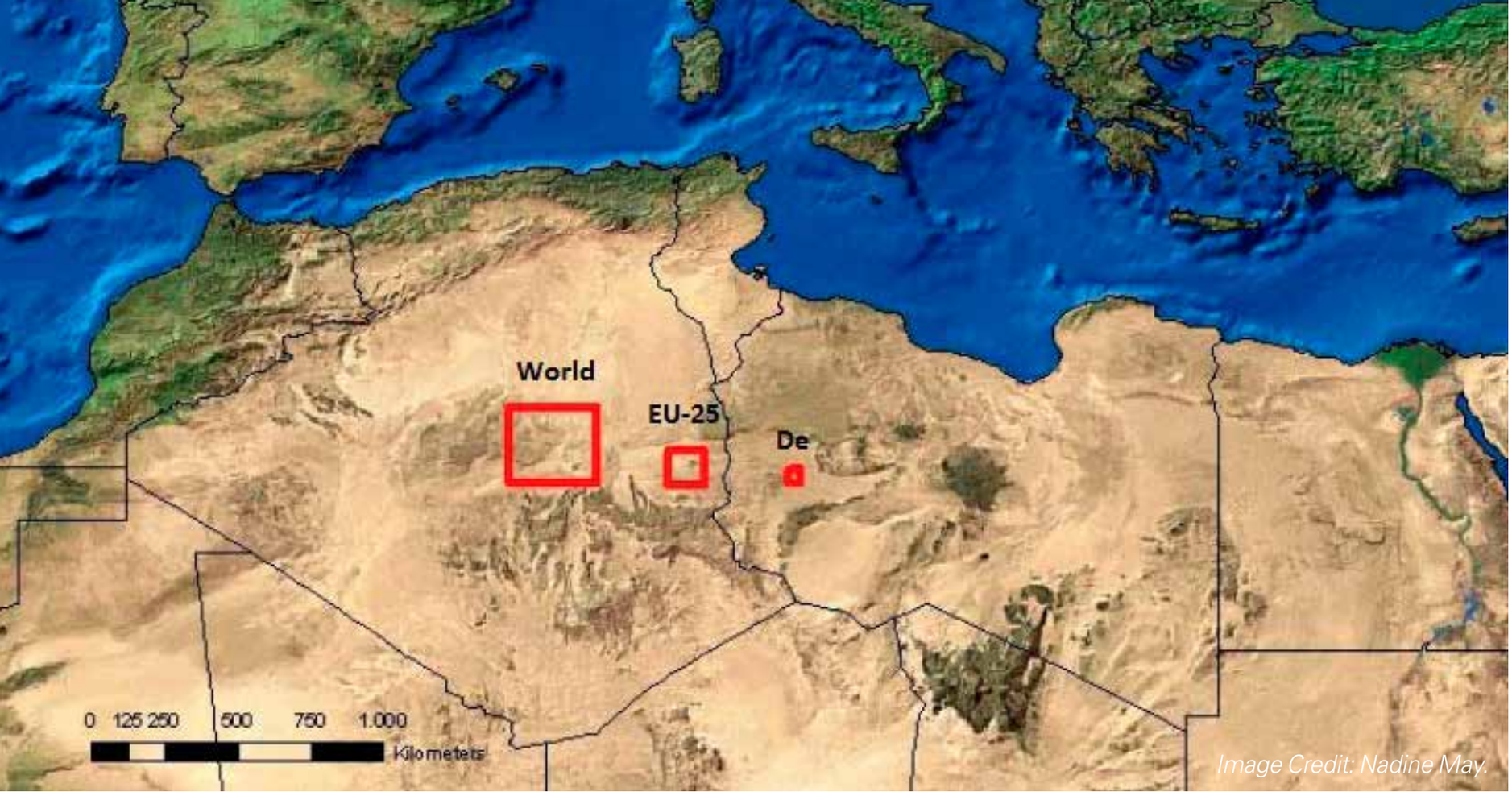

Image Credit: Nadine May.

a direct response to the Chernobyl nuclear accident, he arrived at the following remarkable conclusion: in just six hours, the world's deserts receive more energy from the sun than humans consume in a year. These ideas laid the groundwork for Desertec.

What is Desertec?

Desertec is intended to be a vast network of Concentrated Solar Power (CSP) in the Sahara Desert. Unlike decentralised solar panels on roofs powering individual homes, Desertec is on a far grander scale. It is envisaged as enormous CSP stretching over vast territories. Concentrated solar power will use thousands of mirrors to focus a large area of sunlight on a steam engine. Networks of transmission cables will run northwards, where the electricity will power whole cities and countries. Millions of gallons of water are required to wash the desert dust from the panels and mirrors.

Championed by both the Desertec Foundation and Desertec Industrial Initiative – two different but related entities – the plans have grown and shrunk in recent years. The Industrial Initiative (Dii) promoted a €400 billion vision in which the Sahara CSP were linked to continental Europe through special high voltage, direct current transmission cables, promoting

20% of the EU's electricity supply. The Dii consortium was composed of multinational corporations like E.ON, Munich Re, Siemens and Deutsche Bank, as well as the Desertec Foundation – a network of politicians, business-people, academics and civil society members. But weak economics and opposition to the idea of exporting North African renewable energy to Europe has shrunk the mega-plans, and led to most members leaving the Industrial Initiative.

Currently, Desertec is still going ahead with plans in Tunisia, Morocco and Algeria. Desertec Foundation is backing the Tunur project in Tunisia, a joint venture between UK-based Nur Energy and a group of Maltese and Tunisian investors in the oil and gas sector. It explicitly describes itself as a solar power *export* project linking the Sahara desert to Europe. Given that Tunisia depends on Algeria for its energy needs and is experiencing increased power cuts, it is outrageous to proceed with exports rather than production for local use. Med Dhia Hammami, a Tunisian journalist investigating the energy sector, criticised the ongoing liberalisation of green energy production and transport in his country. This undermines public control by the state company Société Tunisienne d'Electricité et de Gaz, enabling direct export of electricity by private companies – deprioritising the national interest. He described the Tunisian state as submitting itself to private rather than public interests.

The Moroccan government succeeded in attracting funding for the two GW Ouarzazate CSP projects from European lenders (EU, European Investment Bank, the French Development Agency and Germany's KfW), the Africa Development Bank and the World Bank. Just in September 2014, the latter approved a second loan of US$519 million.

Meanwhile, the Moroccan government, with help from Dii consortium members, has attracted funding from international lenders to develop the world's largest concentrated CSP at Ourzazate. It was originally envisioned as an export project, but failed to secure Spanish government support for an undersea cable; the project is now promoted as a means for Morocco to increase its own renewable energy supply. However, the role of multinational companies in the project is still attracting criticism. M. Jawad, a campaigner from ATTAC/CADTM Morocco, is concerned about the increasing control exerted by multinationals on electrical energy production in his country. He sees projects like Ourzazate as a threat to national sovereignty in the clean energy sector, because crucial decisions that affect the whole population are being taken by a handful of technocrats, far from any democratic process or consultation.

To understand the thinking behind Desertec, it is useful to consider some history. Between 1998 and 2006, a set of Euro-Mediterranean Association Agreements were formed between the EU and Algeria, Egypt, Jordan, Israel, Lebanon, Morocco, Palestine and Tunisia. Their stated aim was the "gradual liberalisation of trade" in the region and the establishment of a Mediterranean free trade area. A project with similar goals called the Union for the Mediterranean

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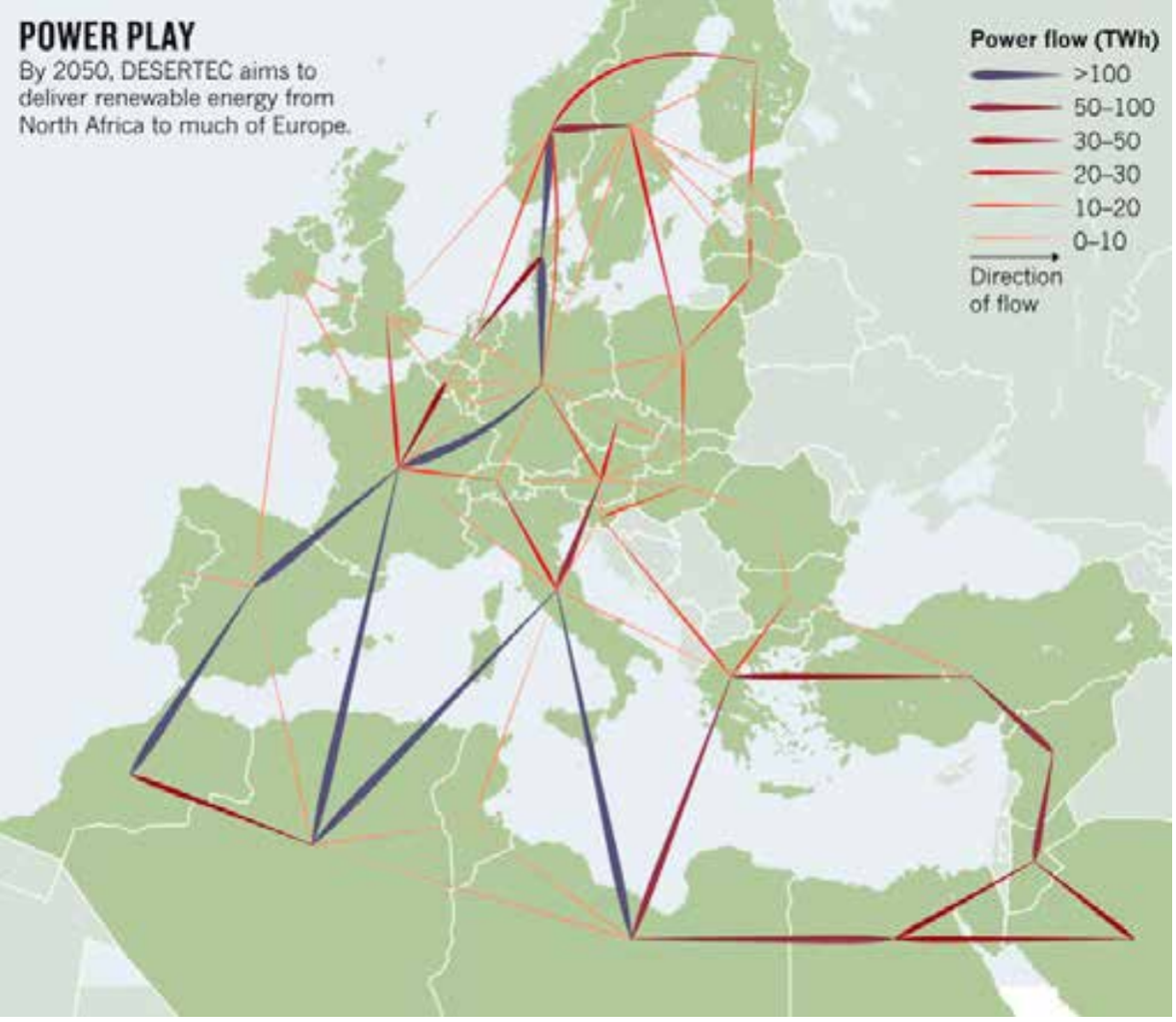

A map of the most cost-effective distribution of renewable-energy sources in 2050, based on simulations run by the Fraunhofer Institute for Systems and Innovation Research in Karlsruhe, Germany.

(UfM) was championed by the French President Nicolas Sarkozy from 2008, to strengthen the "interdependence" between the EU and the southern Mediterranean.

This goal of "interdependence" is reminiscent of previous French Prime Minister Edgar Fouré's famous coinage in 1956, *"L'indépendance dans l'interdépendance"* (independence in interdependence), a strategy promoted by successive French governments to maintain control and domination of the new "independent" African countries. The UfM is designed to follow in their footsteps, furthering EU economic interests and control, and unrestricted access over energy resources. Promoting a renewable energy partnership is a priority core project towards achieving these goals.

It is within this context of pro-corporate trade deals and a scramble for influence and energy resources that the Desertec project is realised. It could play a role in diversifying energy sources away from Russia as well as contributing to EU targets of reducing carbon emissions. And what better region to achieve these aims than MENA, an area well endowed with natural resources, from fossil fuels to sun and wind? The unrestricted flow of cheap natural resources from the global South to the rich industrialised North, therefore maintains the profoundly unjust international division of labour; it seems that a familiar "colonial" scheme is being rolled out in front of our eyes.

This is a genuine and legitimate concern given the language used in different articles and publications describing the potential of the Sahara in powering the whole world. The Sahara is described as a vast empty land, sparsely populated; constituting a golden opportunity to provide Europe with electricity so it can continue its extravagant consumerist lifestyle and profligate energy consumption. This is the same language used by colonial powers to justify their *civilising mission* calling into question such megaprojects and the "well-intentioned" motives that are often sugar-coating brutal exploitation. Daniel Ayuk Mbi Egbe of the African Network for Solar Energy raised similar concerns in 2011. "Many Africans are sceptical about Desertec," he said, "Europeans make promises, but

at the end of the day, they bring their engineers, they bring their equipment, and they go. It's a new form of resource exploitation, just like in the past." The Tunisian trade unionist Mansour Cherni also asked, "Where will the energy produced here be used...? Where will the water come from that will cool the solar power plants? And what do the locals get from it all?"

Sustainable development or status quo?

There is nothing inherently wrong or dishonest in generating vast amounts of electricity in the Sahara Desert. The goal of providing sustainable clean energy for the planet to fight global warming is to be lauded. But like any other idea, the questions of who uses it, how it is implemented, for what agenda and in which context it is being promoted, are of great importance.

Desertec was presented as a response to the issues of climate change, the Russian-Ukrainian gas conflicts in 2006 and 2009, fears of peak oil, and the global food crisis of 2009. However, it does not address any of the structural causes underpinning these issues. Presented as an apolitical techno-fix that would deal with threats without fundamental change, it aims to maintain the status quo and existing power relations that created the crises. Moreover, by presenting the Euro-Med region as a unified community (we are all friends now and we need to fight against a common enemy!), it masks the real enemy of North Africa, which is oppressive European hegemony and Western domination, and repressive local elites that exploit the people for their own benefit.

Big engineering-focused "solutions" like Desertec present climate change as a shared problem with no political or socio-economic context. This perspective hides the historical responsibilities of the industrialised West, the class-based differences within countries, and the different vulnerabilities between countries of the global North and South. Desertec also legitimises the highly dubious idea of "green capitalism" and provides PR cover to major energy corporations, particularly oil and gas-fuelled regimes. Supporting big "clean energy" projects lets them present themselves as environmental protectors rather than climate culprits.

Desertec, the Arab uprisings and a community-centred approach

Any project concerned with producing sustainable energy must be rooted in local communities, geared towards providing and catering for their needs and centred around energy and environmental justice. This is even more important in the context of the Arab Uprisings and the demands of the revolutions: bread, freedom, social justice and national sovereignty. We must be careful of hastily jumping on the bandwagon and cheer-leading such centralised renewable megaprojects, if they are recreating the same patterns of control and exploitation as extractive energy projects.

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In the context of the Arab uprisings, Desertec presented itself as a progressive pathway forwards. Yet it cooperated with corrupt elites and authoritarian regimes, some of which have been overthrown since. The assumption that economic liberalisation and "development" necessarily lead to prosperity, stability and democracy is shamelessly reiterated *ad nauseam* as if neoliberalism and the (under-)development agenda of the West had nothing to do with the uprisings in the first place.

Projects involving large multinationals tend to take a top-down approach, increasing the risk of displacement, land grabbing, and local pollution. Despite the promises, such schemes rarely alleviate poverty or reduce unemployment. This has been a major failing of the Desertec initiative. Only a few actors from the South of the Mediterranean were involved in its development, and most of them represented public institutions and central authorities, not the local communities who would be affected by the project. Large CSP use vast amounts of already scarce water – this should be integrated with community use, and not as a relationship of plunder.

Another important critique is whether these projects transfer the knowledge, expertise, and designs of the renewable technology to the countries in this region. This seems unlikely given the multinationals' usual reticence in doing so and questions of intellectual property around such technologies. One example, the glass troughs (solar thermal collectors) for North African CSP plants are all made in Germany, and the patents for the glass tube receivers are held by German companies. Without fair access to such technologies, North African countries will remain dependent on the West and multinationals for future renewable development. This could prove very detrimental to national sovereignty in the long run.

Solar energy, a new rent for authoritarian regimes?

Instead of providing a route to "develop" away from repressive governments, large-scale and centralised CSP give the state more power over the population, similar to current fossil fuel energy systems. They also allow corrupt and authoritarian elites to generate economic rents at the expense of the people.

Algeria is a prime example. Oil and gas have provided income to the Algerian regime for decades, and are used to buy social peace and maintain its grip on power. As the brutal Algerian civil war (a war against civilians to be more accurate) was raging, with systematic violence from both the state and Islamist fundamentalists, BP finalised a contract worth US$3 billion in December 1995, giving it the right to exploit gas deposits in In Salah, located in the Sahara, for the next 30 years. Total completed a similar deal worth US$1.5 billion one month later, and in November 1996 a new pipeline supplying gas to the EU was opened, the Maghreb-Europe Gas Pipeline through Spain and Portugal. These contracts undoubtedly bolstered the regime as it exerted systematic violence across the country and at a time of international isolation.

Tied to Algeria through huge investments, these companies and the EU had a clear interest in making sure that the repressive regime did not go under and supported the Algerian regime's 'Dirty War' of the 1990s.

A renewable megaproject like Desertec that ties European economies to corrupt MENA governments would create exactly the same kind of problems. Whether fossil fuelled or renewable, energy schemes that do not benefit the people where the energy is extracted, that serve to prop up authoritarian and repressive regimes, or that only enrich a tiny minority of voracious elites and multinationals, are scandalous and must be resisted.

Advocates for benign-sounding clean energy export projects like Desertec need to be careful they are not supporting a new "renewable energy grab": after oil, gas, gold, diamonds and cotton, is it now the turn of solar energy to maintain the global imperial dominance of the West over the rest of the planet?

Rather than embracing such gargantuan projects, we should instead support decentralised small-scale projects that can be democratically managed and controlled by local communities that promote energy autonomy. We do not want to replicate the fossil fuel tragedy and therefore we must say, "Leave the sunlight in the desert for its people"!

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