Introduction a l’urbanisme

- Fadwa Jbeily
- Santé et environnement
- “3ème année”

The Future of the Energy

- To briefly summarize, coal is marked for death. The "artificial" market force of global warming and action against pollution has pushed the fuel out of the firing line and onto the slag heap. Many Countries in the world have already started producing energy using more sustainable and renewable sources, replacing the old and inefficient traditional fossil fuels way.

Renewable Energy Types

- Wind Power
- Solar Energy
- Hydro Power
- Wave Power

Smart cities and utilities share an interest in deploying energy sources that align with their goals . These renewable energy sources now come closest to meeting the growing demand for reliable, affordable, and environmentally responsible energy sources that utilities seek to provide.

In Lebanon we are struggling with many problems which renders even the simplest Human rights inaccessible, one of them being the electricity shortage.

Lebanon's electricity sector has always been on the verge of total failure, and the government continued to waste money and steal it instead of fixing the problem despite the unprecedented revolution that started in 2019 due to the catastrophic economic situation.

Because of that, Lebanon has been always suffering from electricity shortages, throwing the country into a state of complete darkness in 2021.The crisis also left half of Lebanon’s population in poverty, the fuel shortages forced Lebanon's largest hospitals to reduce their activities. At the same time, public water supply, wastewater treatment systems and the irrigation systems that rely on fuel have cut back on their operations, leaving millions without access to water, and jeopardizing environmental and public health.

How can we solve this problem

- Let me introduce you to a local innovative project that I'm very proud of-> **Smart Power** is a smart business led by Lebanese entrepreneurs; together they're helping our country
- https://smartbusinesslb.com/smart-power/

Their mission

- **SMART BUSINESS SAL** is a team of business enthusiasts with a mission to remodel economic thinking, especially after the financial and economic crisis that surfaced in Lebanon since late 2019.
- **OUR MOTTO** speaks for itself: Enable, Empower, and Engage.
  We **enable** entrepreneurs, businesses and projects by providing necessary tools and solutions, **empower** communities, producers, service providers and customers in various ways, and most importantly **engage** all stakeholders of the value chain in building healthy, sustainable and ethical business relationships.

- The company have worked on several projects in various Lebanese regions, it installed solar power panels that produce energy when the sun hits them which is an efficient substitution of fossil fuels that costs us a lot and hurts the environment, for example they've helped the farmers in Chihine, Lebanon, that for a great time have struggled irrigating their crops due to the shortage in diesel that powers the pumps; so now, in the dry summer, they can rely on solar energy to irrigate their crops, and in winter, rain water does the job
- Feedback: https://www.instagram.com/p/CUMm0ZdFA-C/?utm_source=ig_web_copy_link

The 12 different projects that they have worked on

Achrafieh

Achrafieh

Residential

2 Systems installed, 1 Inverter 5.5kW MUST PV18 VHM 5548 8 Batteries Tubular 220Ah, 12V 12 Panels 330W, monocrystalline 1 System feeding Mother-in-law apartment: 1 Inverter 5kW, MUST PV18 VHM 5048 4 Batteries Tubular 220Ah, 12V 12 Panel 330W, monocrystalline

Amchit

Amchit

Residential

The system is composed of: 1 Inverter MUST PV18 VHM 5548, 5.5kW 8 Batteries AGM 12V, 250Ah 10 Panels 380W, Monocrystalline

Batroun, Abrin

Batroun

Residential

PV18 VHM 5048 inverter, 4x240Ah 12V Batteries Tubular 12 Panels 330W

Hadath

Hadath

Residential

5.5 kW Off-grid, 12 Panels 330W, 8

Hamra

Hamra

Residential

5.5 kW Off-Grid, 12 Panels 330W, 4 Batteries Tubular 220Ah, 12V

Mansourieh

Mansourieh

Residential

The system is composed of: 1 inverter MUST PV18 VHM 3024, 3kW 4 Batteries Gel 200Ah, 12V 6 Panels 330W, Monocrystalline

Sawfar

Sawfar

Residential

5.5 kW Off-Grid, 12 Panels 330W, 4 Batteries Tubular 220Ah, 12V

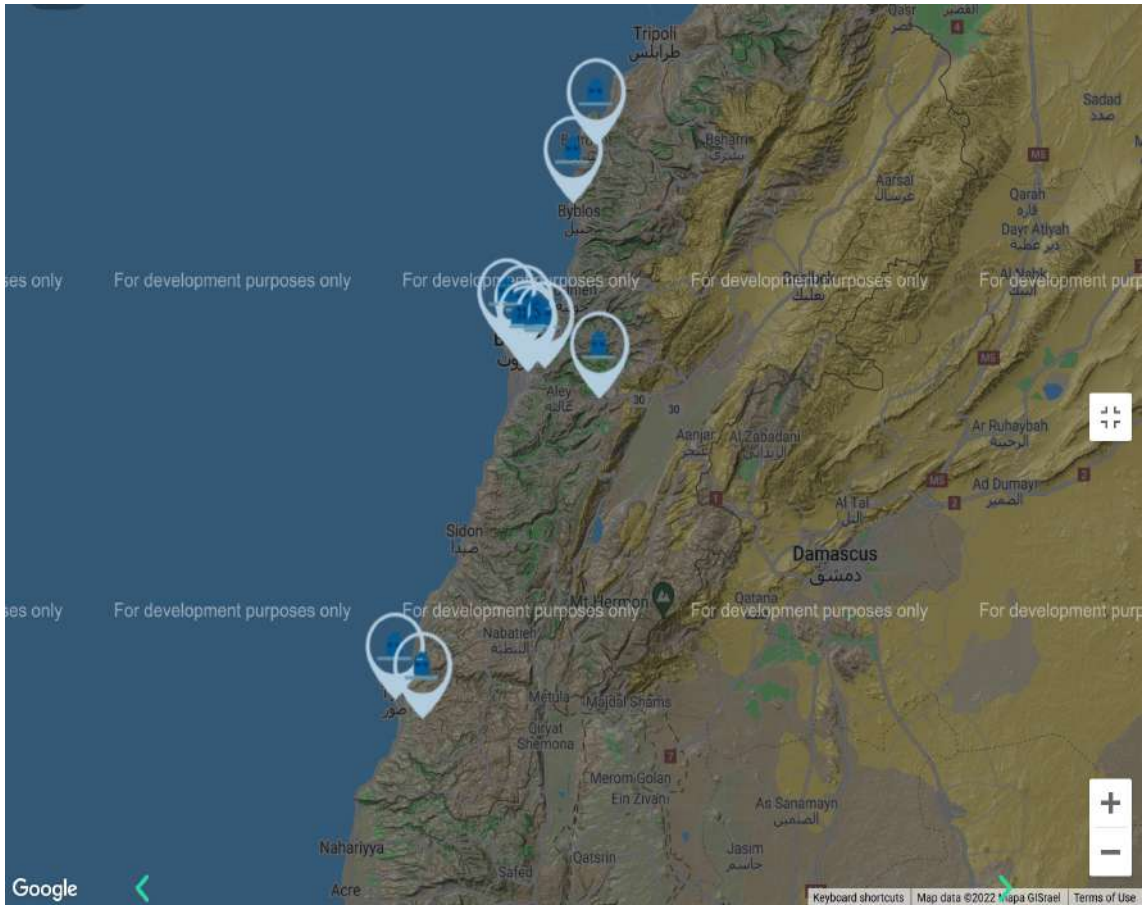
Tyre

Tyre

Residential

5.5 kW Off-grid, 2 Panels 330W, 8 batteries AGM 250Ah, 12V

Tyre, Ain Baal



The achievements

DIESEL SAVED

annually

24,570

GALLONS

REDUCED CO2

annually

763

TONS

MONEY SAVED

cost on EDL

118,360

DOLLARS

ENERGY GENERATED

annually

1,076

MWh

PROJECTS INSTALLED

till now

13

All Over Lebabon

The cost

Residential solar power RSP- 1800 / 5amp

$2,800.00

Residential solar power RSP- 3600 / 10amp

$3,400.00

Residential solar power RSP- 4500 / 15amp

$6,000.00

Residential solar power RSP- 6300 / 20amp

$6,900.00

Another country that have struggled with the same problem

- Kenya, only 3 % of Kenyan farmers use the irrigation techniques needed to become more productive. About two-thirds of people living in rural areas in developing countries live off farming. They have limited access to markets and inputs, and they are exposed to constant risks. One of the key challenges for farmers in many regions is access to water.

sunculture

- Sunculture is a Kenyan company owned entirely by the UK government that provides solar-powered irrigation solutions to African farmers. They currently operate in East Africa and planning expansion to other regions. The company aims to be a ‘one-stop shop’ for farmers, supporting them with the tools, knowledge and finance to grow their businesses. Technicians and agronomists trained by SunCulture also provide on-farm training, soil analysis and agronomy support by cell phones available anywhere in Kenya.

The action

- In 2017, SunCulture launched the RainMaker, a solar-powered water pump that can lift 6,000 liters of water per day and can pump from wells up to 100 meters deep, compared to current market alternatives that draw from 10 meters deep. Another benefit is that it is 90% less expensive than the company's previous product. The company provides a pay-as-you-go financing model to make the pump even more affordable. Using energy from a portable 120-watt solar panel and battery bank, the RainMaker can pump enough water to irrigate a half-hectare farm and fulfil household water needs like drinking, cooking and cleaning.

The result

- Before purchasing the RainMaker, half of the customers used a fuel pump or a generator for water extraction. Electric water pumps are not viable without a connection to the grid, so farmers mostly used diesel, which made irrigation not just expensive, but an unaffordable option for many farmers.
- In total, the data found that farmers were saving 17 hours per week from no longer moving around 20-liter cans, while collecting water from wells, boreholes or communal rivers and lakes. They now use that time for more productive uses and to tend to family needs.

Feedbacks

- **“I save a lot of cash that I initially spent on buying petrol for pumping water.”**
- **I have seen great increase in fact I have managed to plant cucumbers in extra patch of land, something I could not do before I had the pump.”**
- **“I have water all the time. Even during the dry season I can plant crops as I wait for the rains to come”**

So, Who’s better ?

Smart Power is a startup company in a country that is going through a big economic crisis and the cost of their projects is very expensive compared to the minimum salary in Lebanon per person, in other words not everybody can afford it while Sunculture is working on producing a machine (The RainMaker) that helps all types of people at a lower cost. Add to that, Sunculture is financially supported by the Government while Smart Power is an independent company that relies on the support of its own founders which leads to a low capital that limits the possibility of large expansions.

Thank you for your time