

GEMINI next Generation Jordan Syria



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Worldwide wealth is a necessity

People's prosperity has risen steadily, especially after the first industrial revolution 2 centuries ago. But this first industrial revolution unfortunately brought us not only a great upswing, but also the existence-threatening problem of climate change.

We will have to solve this problem with measures that most people today do not even want to or can imagine, especially because mankind today is still far too poor for the realization of a planetary renovation.

That is why worldwide prosperity based on clean energy from the sun and wind is a prerequisite for solving this existentially threatening problem.

GEMINI means twin in Latin and stands for the double use of land for living and for the generation of energy. Since houses, even with a very comfortable indoor climate and the use of electric cars, produce many times the amount of electricity they need, they should have special privileges with land, similar to the fact that farms can get land at a fraction of the price of building land.

What more can you grow and harvest if you can overcome the dry season of the year with up to 57 m³ rainwater storage?

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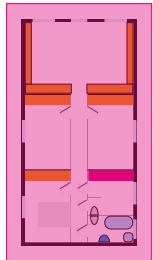
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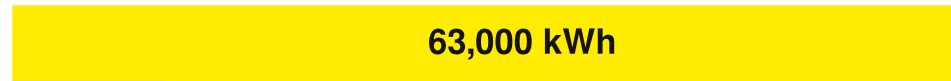
Yearly electricity yield in Syria and Jordan

Houses

Garages or carports



13,000 kWh for household and 3 electric cars



10,000 kWh for household and 2 electric cars



9,000 kWh for household and 2 electric cars



6,000 kWh for household and 1 electric car

Only saving energy is not a solution, autarky is only for egoists who think only of themselves but not of the community.

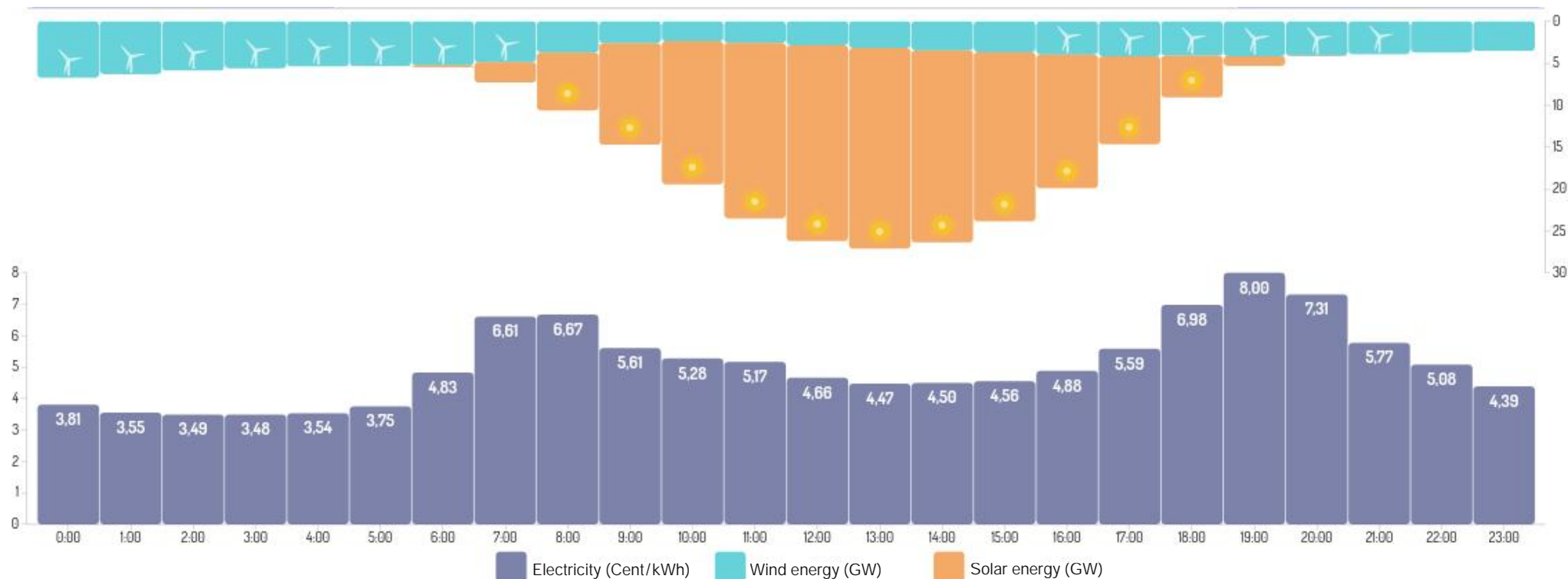
GEMINI next Generation houses are designed for the greatest possible difference between electricity generation and own consumption, the inhabitants of such houses can be called energy farmers, because even with the use of electric cars the electricity generation exceeds own consumption five to seven times.

360 thousand houses = Jordan Electricity production 2016

In 2016, 20 TWh of electricity was generated in Jordan. With the mix of houses with carports shown here, 360 thousand would have produced 20 TWh of electricity.

Since equipped with 25 kWh to 150 kWh lithium iron phosphate batteries, the solar power could have been supplied day and night.

About electricity trading and storage



This is the hourly electricity price on the EEX - European Energy Exchange - the electricity brokerage exchange on 28 August 2019. Anyone who has an electricity storage facility can achieve significantly better prices than when solar electricity is fed directly into the grid.

Depending on the needs of the homeowner and the local electricity market, the GEMINI next Generation is supplied with 50kWh to 150kWh of storage capacity.

Photovoltaics with electricity storage is also much better for the local infrastructure, because lines and transformers can be dimensioned much smaller than when the solar power is delivered 1:1 into the grid.

If the local electricity market is characterised by a very energy-intensive industry, such as a cement factory, which consumes 24 hours of electricity evenly, then a house is equipped with a high battery capacity.

The world record for the lowest feed-in tariff is just US\$ 0.0169/kWh in Dubai, but only "electricity when the sun shines".

GEMINI next Generation settlements have the possibility to supply electricity according to demand with the electricity storages, with the heat/cold storages in order to produce heat or cold optimised in time with low electricity demand.

For example, the demand for electricity is usually lowest on Saturdays and Sundays. This is a good opportunity to produce cold for the next week in summer.

All these optimizations are done by our SmartHome software.



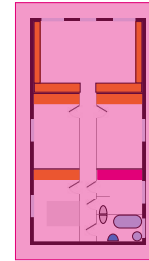
This is the Tesla battery at Hornsdale in Australia. It can store 129 MWh, a settlement of 2,000 houses would have the same storage capacity. It can deliver or store 100 MW, a settlement of 3,000 houses would have the same capacity.

The system earns through various services for electricity grid stability .

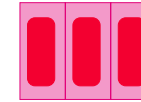
Settlements of GEMINI next Generation houses should achieve an average revenue of 0.04 EUR per kWh in a mix of electricity sales and grid services.

Yearly yield with 0.04 EUR/kWh

Houses



Garages or carports



2,240 EUR

2,120 EUR

1,560 EUR

1,440 EUR

Household electricity free, cooling free, heating free, even the electricity for 1 to 3 electric cars delivered free from the house. In addition still above mentioned electricity yields with only EUR 0,04/kWh average revenue.

What is the use of 34m³ or 57m³ rainwater storage tanks?

When scientists, state-of-the-art irrigation technology and the creativity of thousands of homeowners work together, we can be very excited about the results.

Who would rather live in a block of flats than create their own little paradise, especially if the total costs in a GEMINI next Generation are perhaps even significantly lower than a flat in a block of flats?

Industrial electricity prices

The industrial electricity price is an important cost factor in production. In very sunny countries, such as Jordan and Syria, larger GEMINI next generation settlements could provide clean electricity for 4 cents per kWh to near industrial plants.

The housing estates of the workers are at the same time the power supply for the factory.

Recycling

Everything we consume has to be recycled later. The more perfect this recycling is to be, the more energy it will require.

Recycling research is still very underdeveloped today because it quickly reaches the limits of what is sensible and feasible with dirty, expensive energy.

With cheap clean energy it will be possible to perfect recycling more and more.

Energy exports with Power to X

Power to X is the reverse process of combustion: Energy is used to split CO2 back into carbon and oxygen, H2O into hydrogen and oxygen.

The countries far to the north need energy in winter. In order to operate CCPP – combined cycle power plants in an increasingly environmentally friendly way, natural gas will gradually be replaced by methane from power to methane. Methanol is perhaps cheaper to transport than methane, which is currently being researched.

In the future we will fly even more than we do today. Worldwide wealth also means that many more people will be able to afford air travel. With Power to Liquid we will produce the fuel for it.

