وزارة الطاقة والصناعة والثروة المعدنية
المملكة العربية السعودية

رؤية VISION 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

Cities of the future: Resilience in Disruptive Era

AI counselor and reducing greenhouse gases (GHGs)

Engineers of the Future Team

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Problem Statement

Data collected from both **Saudi climate transparency report and general authority for statistics in 2019** shows the percentage of households that use public electricity at home is 99.98% , where more than 99% of public electricity production in 2019 depend on fossil fuel which is one of the biggest causes GHGs

On the other hand, the percentage of households using solar energy at home is 1.6% and 52.26% for who willing to get photovoltaic solar cells, And here the problem lies where many citizens may use some of the wrong or inappropriate types of solar energy, or their lack of knowledge of its other types, and here where our project comes to solve this problem

Problem Objective

- Increase the percentage of households using solar energy at home from 1.6% to higher percentage
- Increase citizens' economic awareness as much as possible
- Keeping pace with the Kingdom's vision 2030 to reducing dependence on fossil fuels and moving towards clean energy
- Helping citizens reduce electricity costs

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Saudi Data & AI Authority

الهيئة العامة للأرصاد وحماية البيئة
The General Authority Of Meteorology and Environment Protection

Solution

Cooperation between the general authority of meteorological and environment protection and the saudi data and ai authority to create an application based on artificial intelligence that is used to find out the appropriate type of solar energy, depending on the location and some algorithms given by the user

In short, the application suggests the appropriate type of solar energy to the user, Either be Photovoltaic solar cells or Passive solar design or Solar Thermal cells or a mix between two or three of them. Finally, implementing a clean energy system leads plus less greenhouses gases
And this is our goal

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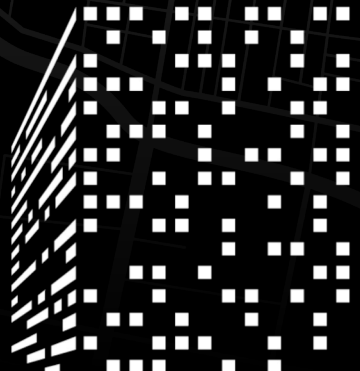
Types of solar energy

Photovoltaic solar cells

Depend on producing electricity from solar energy

Passive solar energy

Depend on house designs



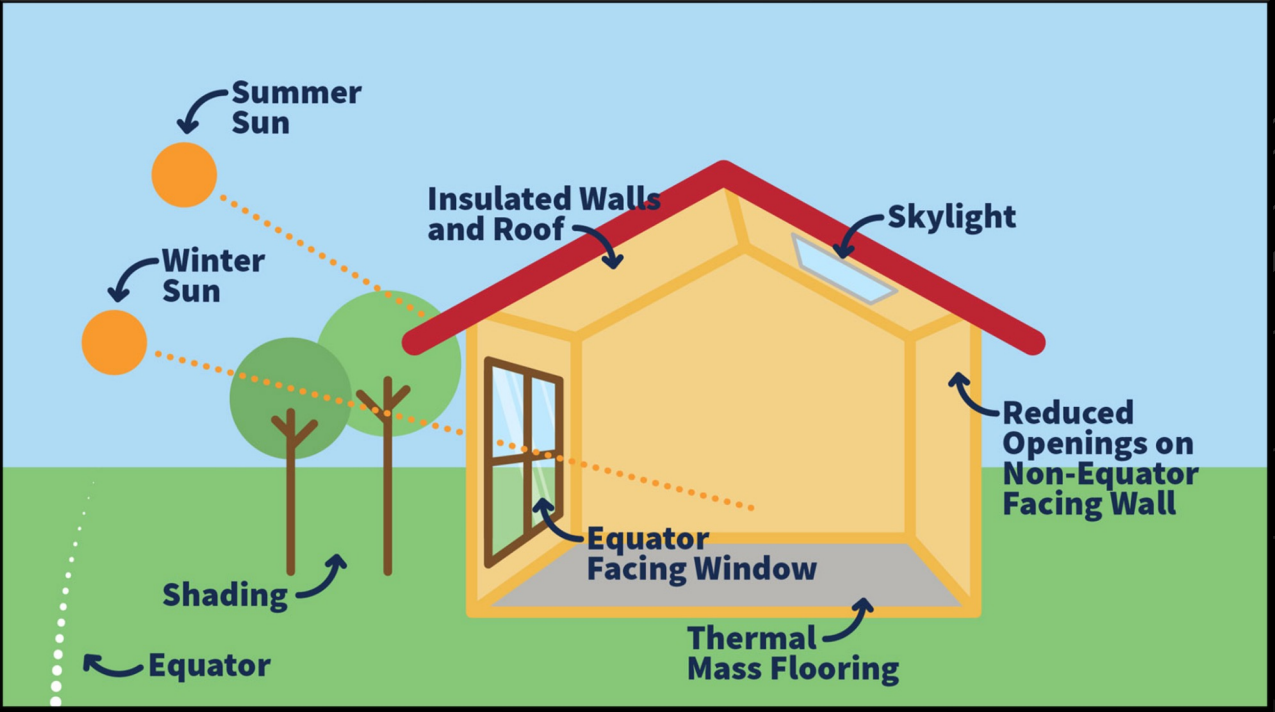
Solar Thermal cells

Depend on producing heat energy from solar energy

Photovoltaic solar cells

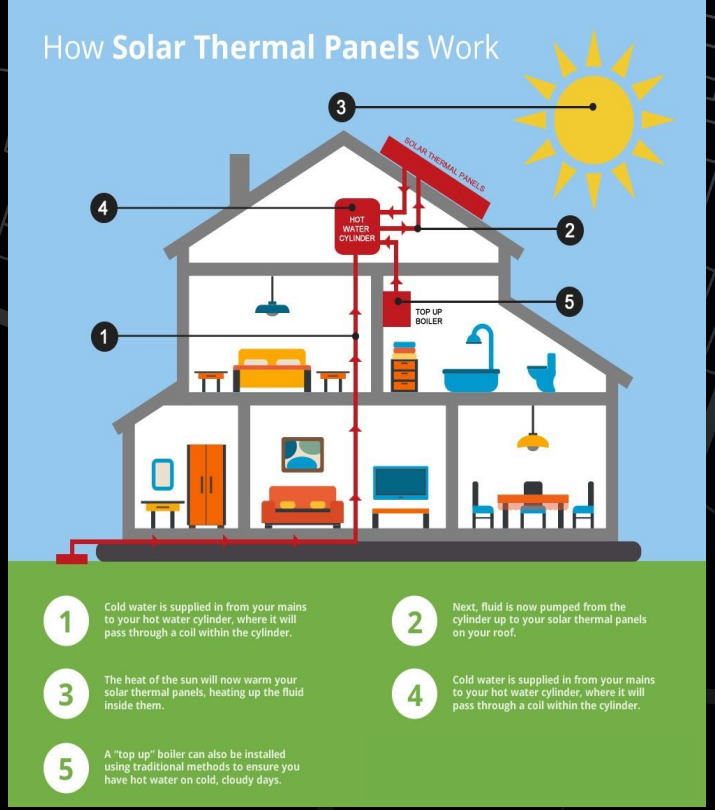
This is the appropriate substitute for the usual electrical energy which is used in houses for powering electrical appliances. Photovoltaic cells will capture the energy which is generated from the sun and get it converted into electricity.

Passive solar design



Passive solar design takes **solar** home first reduces heating and cooling loads through **energy**-efficiency strategies and then meets those reduced loads in whole or part with **solar energy**.

Solar Thermal cells



A solar thermal energy plant will be used for creating solar-generated heaters which can be used for heating water and also as an indoor heating system. Thermal cells will be used to capture the energy which has been generated by the sun and then convert it into heat energy.

Types of solar energy	Pros	Cons
Photovoltaic solar cells	• **It** can be added to the home without changing the design of the house • **A** good option for regions with dry climates	• **Quite** expensive • **Not** suitable for shaded and cloudy areas • **Not** for Flat Roofs
Passive solar design	• **Suitable** for cloudy areas • **It** doesn't require direct sunlight • **It** still cuts costs	• **There** may not be local providers • **It** can spike engineering costs • **Each** system must be individually created
Solar Thermal cells	• **The** Best For Hot Areas Such As Riyadh And Jeddah • **Can** Be Combined With Solar PV • **Requires** Little Space • **Solar** Thermal Reduces Heating Bills	• **Not** Suitable For Cloudy Areas • **Hot** Cannot Be Stored For Long • **Installation** is Expensive

Project Prototype

1

LOG IN

Forgot password?

REGISTER

2

COMPELET THE INFORMATION NEEDED TO ANALYZE LOCATION

(*) IS NECESSARY INFORMATION

City*

District*

The Size Of Building*

Size of shadows on building

High | Medium | Small

Number of air conditioner

Add Location*

ANALYZE

3

ANALYSIS RESULT

Suited type: E.g. Passive solar design

consumption rate/Month: E.g. 6500 W

Approx.cost of installation E.g. 40,000

Suggested contractors

More info. About your suited type

SHARE

SAVE

REANALYSE

Features of project

It relies on big data

It works on different platforms

It depends on artificial intelligence

Meets the user's needs

It doesn't take much time

Trusted by authorized entities

Motivations

Discount

Giving a discount of 10% or more on the electricity bill if the citizen buys one of the types of solar cells

Warranty

Maintenance is free for an additional year or more over the usual warranty if the citizen buys one of the types of solar cells

Stakeholders

The majority of our project users are owners of homes and buildings in cities or Villages

Or anyone who wants to know what kind of solar energy is suitable for his area

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