Iraq desalination with solar energy

Will Iraq need more seawater desalination?

In the long run,vulnerable Iraqi cities such as Basra will need much more seawater desalinationas part of a holistic water strategy that includes reuse,repair and construction of new water lines,water-saving innovations,the complete elimination of illegal tapping,in addition to a functioning and realistic tariff system.

Why do we need a low energy for desalination?

Brackish water (lower salt)requires a low energy for desalination than seawater [16]. The principal function of the desalination technologies is reducing the saline concentration of the water to convert it into potable water which utilized by humans.

Will there be a desalination plant at Al Fao?

Talks for a desalination plant at Al Fao have been ongoing. In April 2019,Iraq's Ministry of Municipalities,Housing and Public Works announced work would begin on a mega plant working with Austrian consultancy ILF to produce up to 1 million m3/day water. A tender announced in April 2020 says the ILF project will use RO technology.

Will ILF be the world's largest RO desalination plant?

A tender announced in April 2020 says the ILF project will use RO technology. If implemented successfully,this will be the largest RO desalination plant in the world,bigger than the Taweelah plant in Abu Dhabi,which is currently under development with a 900,000 m3/day capacity.

How much does a desalination plant cost?

According to a study by Advisian,a "large" desalination plant (over 300,000m3/day) has an average annualized cost of $0.70 cents/m3.

What is the main function of desalination technologies?

The principal function of the desalination technologies is reducing the saline concentration of the waterto convert it into potable water which utilized by humans. There are many technologies for desalination,which could be split to two major types,thermal and membrane separation processes.

This paper aims to highlight the importance of solar energy in Iraq as a potential contributor to help bridge the gap between electricity supply and growing demand. ... H. A. Kazem, K. I. Abaas, A. A. Al-Waeli, "Homemade solar desalination system for Omani families," International Journal of Scientific & Engineering Research, vol. 7, no. 5, pp ...

possibility of reducing energy costs for obtaining pure water by integrating solar energy into the desalination system. Although it is technically complex due to the irregularity of solar radiation ...

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DEWA and ACWA Power Ink Deals for Phase 1 Of The World"s Largest Renewable Energy-Driven Desalination Plant; Iraq Approves $68 Million Solar Power Project For Government Buildings; And More ... SolarQuarter is one of the world"s largest global solar energy sector media with an annual reach to 1,000,000+ industry professionals. ...

Solar desalination is a desalination technique powered by solar energy. The two common methods are direct (thermal) and indirect (photovoltaic). [1] History ... The latter traps solar energy, evaporating the seawater. The vapor condenses on the inner face of a sloping transparent cover, leaving behind salts, inorganic and organic components and ...

Despite this potential, renewable desalination as a whole accounts for only 1% of the global installed capacity. 15 This can be attributed to the higher current cost of solar energy generation, resource intermittency, and the higher desalination capital cost at smaller scales. However, these trends are expected to change with the global transition to a decarbonized ...

Today one of the most popular and simple ways of desalination is the distillation of water with the help of solar energy. UrFU scientists, together with colleagues from Iraq, have developed a hybrid technology to increase the efficiency of evaporation inside a solar distiller by means of a rotating hollow cylinder and a solar collector ...

Today one of the most popular and simple ways of desalination is the distillation of the water with help of solar energy. UrFU scientists, together with colleagues from Iraq, have developed a hybrid technology to increase the efficiency of evaporation inside a solar distiller by means of a rotating hollow cylinder and a solar collector.

It was suggested that solar energy could be used to distill polluted or salty water without harming the environment. ... Based on various performance criteria, the study analyzes direct solar desalination processes. ... He recieved his MSc in Mechanical engineering from Mechnical Engineering department, University of Technology- Iraq at 2004 ...

Solar power stands out as the prime choice among renewable energy sources for competing with fossil fuels in desalination due to its ability to utilize both heat and power for the process. This study introduces the concept of employing a parabolic trough solar collector (PTSC) to power a once-through multi-stage flash (OT-MSF) desalination unit in the climate of Basrah ...

This paper examines the cost competitiveness of an extra-large-scale (275,000 m 3 /d) solar-powered desalination, taking as a case study the Chtouka Ait Baha plant in Morocco. It assesses the conditions at which solar Photovoltaics (PV) and Concentrated Solar Power (CSP) would be competitive with a grid (mainly fossil) driven desalination plant for the reference year ...

Seawater desalination using solar thermal energy with passive techniques is vital for arid areas that have

shortage in electricity grids or any other sources of energy. ... This is one of the factors that prevents the solar basin from being used in Iraq during the summer, because the air temperature, even in the shade, can exceed 50°C between ...

In this research, an analysis of site suitability and potential desalination capacity for an integrated concentrated solar power (CSP) and reverse osmosis (RO) system can be established to ...

A solar parabolic dish concentrator is designed and manufactured to desalinate the saline and brackish water to produce fresh water. The system consists of a solar parabolic dish concentrator with a sun-trucking system, a steam generator (absorber), in addition to a heat exchanger (condenser) to condense the generated steam and convert it to water.

The 1-GW solar project in Najaf Governorate is expected to contribute significantly to Iraq"s renewable energy goals and reduce its reliance on fossil fuels. ACWA Power Co, a Saudi electricity producer and water desalination company, brings expertise and experience in the renewable energy sector, making them a suitable partner for the project.

According to the desalination methods, solar energy is used as heat, electricity or mechanical energy [41]. The development of seawater desalination technique based on the MED technique with zero brine discharge is ongoing as a mature technology. ... The Ministry of Energy: 7500: 2030: Iraq: PV Solar Plan 2017-2020b and the Ministry of ...

This study aims to (i) assess the progress of solar energy systems including concentrated solar power (CSP) and photovoltaic (PV) to power both thermal and membrane seawater desalination processes ...

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