

ACCESS TO DRINKING WATER IN DESERT REGIONS: SOLAR-OBTAINED WATER

ROCIO MARTINEZ AGÜERA- Civil Engineering student

PRISCILA ANTONELLA ROMERO - Civil Engineering student

Universidad Tecnológica Nacional, Facultad Regional Paraná

Ingles II- 2022

This work is an EFL student project. The pictures in this presentation are only used for educational purposes. If there is any copyright conflict, they will be immediately removed.

THE PROBLEM

THE PROBLEM

- Lack of drinking water in desert areas.
- Drinking water producing systems not friendly with the environment.



MAP OF THE PRESENTATION

MAP OF THE PRESENTATION

DESCRIPTION OF THE SYSTEM:

- General comment on the operation of the system.
- Only company that makes the product: Source Hydropanels.

SYSTEM COMPONENTS AND WATER HARVESTING PROCESS:

- Five main components.
- Dimensions and capacity of each unit.
- Process in detail.

ADVANTAGES AND DISADVANTAGES OF HYDROPANELS:

- Eco friendly.
- Cost.
- Versatility.

DESCRIPTION OF THE SYSTEM

SYSTEM COMPONENTS AND WATER HARVESTING PROCESS



- Different stages: The air is collected. It turns into water and mineralizes.
- Obtaining and purification process: two stages where two elements act.
- Dimensions and capacity: each panel measures 1.2m x 2.4m. Capacity of almost 30 liters and weighs approximately 124 kilograms.
- They have a battery for cloudy periods.

ADVANTAGES AND DISADVANTAGES

- DISADVANTAGES:
 - ❖ High cost (\$5500 - \$6500).
 - ❖ It does not cover the necessary basic demands.
- ADVANTAGES:
 - ❖ Innovative and decentralized drinking water.
 - ❖ Environmentally friendly.
 - ❖ The system returns sustainable and quality water.
 - ❖ It uses few pieces of pipe.
 - ❖ Small size and no electricity required.

CONCLUSION

CONCLUSION



REFERENCES

REFERENCES

1. National Academy of Engineering, *NAE Grand Challenges for Engineering*, USA, Washington, 2017. Accessed: May 20, 2022. [Online]. Available: <http://www.engineeringchallenges.org/File.aspx?id=11574&v=34765dff>
2. United Nations, *The Sustainable Development Goals Report*, 2021. Accessed: May 20, 2022. [Online]. Available: <https://unstats.un.org/sdgs/report/2021/>
3. "How Do Hydropanels Work? SOURCE Water". SOURCE Water. Accessed: August. 27, 2022. [Online]. Available: <https://www.source.co/how-hydropanels-work/>
4. B. Ankaiah, R.P.Mandi, Ananda M.H, S. Oommen, A. Balaji, "A Novel approach and Comprehensive Analysis for Hydro panel that makes drinking water from sunlight and air", *Int. Journal Res. Advent Technol.*, vol.7, no. 5, pp. 296-300, May 2019. Accessed: Aug. 10, 2022. Doi: [10.32622/ijrat.75201902](https://www.ijrat.org/downloads/Vol-7/may-2019/75201902.pdf) [Online]. Available: <https://ijrat.org/downloads/Vol-7/may-2019/75201902.pdf>
5. R. F. Service, "This new solar-powered device can pull water straight from the desert air". Science. [Online]. Available: <https://www.science.org/content/article/new-solar-powered-device-can-pull-water-straight-desert-air> (accessed Aug.27, 2022)
6. H. Kim, S.R. Rao, E.A. Kapustin et al. "Adsorption-based atmospheric water harvesting device for arid climates", *Nat. Commun.* vol. 9, no. 1191, Mar. 2018. Accessed: Aug. 27, 2022. [Online]. Available: <https://www.nature.com/articles/s41467-018-03162-7>
7. "El Poder del Sol para Extraer Agua Potable y Pura. Source" (accessed Aug. 27, 2022). [Online]. Available: <https://www.ahorrosolar.distanceperu.com>
8. I. Tubert and V. Talanquer. "Sobre adsorción", *Educación Química*, vol. 7, no. 4, pp. 186-190, 1997. Accessed: Aug. 24, 2022. DOI: <http://dx.doi.org/10.22201/fq.18708404e.1997.4.66595> [Online]. Available: <http://www.revistas.unam.mx/index.php/req/article/view/66595>

THANKS FOR LISTEN!