

Solar-Thermal Energy: The Solution to the Energy Storage Problem in Industries



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English II - 2023

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Introduction: Storage Issue



Batteries



Long nights

Introduction: Storage Issue

ENVIRONMENTAL IMPACT

SOLAR SYSTEM

SOLUTION

STORAGE ISSUE

7

13 CLIMATE ACTION



PURPOSE

SHOW

NEW TECHNOLOGIES

Map of the presentation

PROBLEM



PROBLEM WITH THE
USE OF BATTERIES TO
COLLECT SUNLIGHT



SOLUTION



ADVANCED SOLAR
THERMAL STORAGE
SYSTEM



ADVANTAGES AND
WAEKNESSES

GOOD ALTERNATIVE
TO SUPPLY ENERGY

PROBLEM DESCRIPTION: Batteries are not sufficient

Why?

- ❑ EXPENSIVE
- ❑ LOW DURATION



BATTERIES



CLOUDY DAYS

PROBLEM APPROACH: ADVANCED THERMAL STORAGE SYSTEM

HELIOSTATS



- ❑ FLAT AND CURVED MIRRORS
- ❑ TERRAIN OF 40-60m²
- ❑ 70% EFFICIENCY

PROBLEM APPROACH: ADVANCED THERMAL STORAGE SYSTEM

CENTRAL RECEIVER TOWER



(a)



(b)



- ❑ CONCRETE OR STEEL
- ❑ TEMPERATURES HIGHER THAN 800°C
- ❑ EXCELLENT EFFICIENCY

PROBLEM APPROACH: ADVANCED THERMAL STORAGE SYSTEM

WORKING FLUID

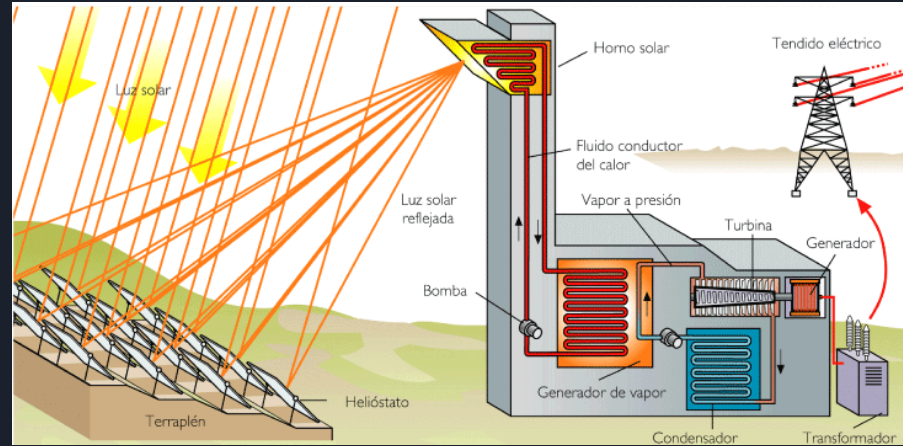
- WATER
- LIQUID SODIUM
- LIQUID SALTS
- THERMAL OILS



PROBLEM APPROACH: ADVANCED THERMAL STORAGE SYSTEM

Solar Thermal Energy System

- ❑ HELIOSTATS REDIRECT SUNLIGHT.
- ❑ THE RECEIVER ABSORBS THIS HEAT.
- ❑ THE RECEIVER INCREASES THE TEMPERATURE OF A WORKING FLUID.
- ❑ STEAM DRIVES A TURBINE.



REASONS FOR USING SOLAR THERMAL ENERGY

ADVANTAGES

- ❑ EFFICIENCY
- ❑ RENTABILITY
- ❑ SUSTAINABILITY
- ❑ LOW ECOLOGICAL FOOTPRINT

WEAKNESSES

- ❑ LARGE PLACE NEEDED
- ❑ GREAT INITIAL INVESTMENT



CONTAMINATION

CONCLUSION

- ❑ SUSTAINABLE SYSTEM 
- ❑ GREAT INITIAL INVESTEMENT 



- ❑ SYSTEM FOR A GREAT INDUSTRIES



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THANK YOU FOR YOUR ATTENTION

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