



Energy Sector Management
Assistance Program



ESMAP 2024

Geothermal Energy: Empowering Development Beyond Electricity Generation

May 28, 2024

©Supreme Energy, Indonesia



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Assistance Program



ESMAP 2024



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<http://proyectos2.iingen.unam.mx/IIDEA/>

Mexico – Advancing Geothermal Direct Use for Sustainable Food Production and Food Security

Dr. Héctor Aviña Jiménez

May 28, 2024



IIDEA GROUP

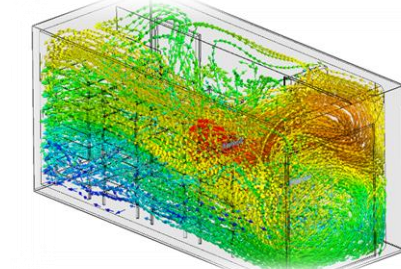
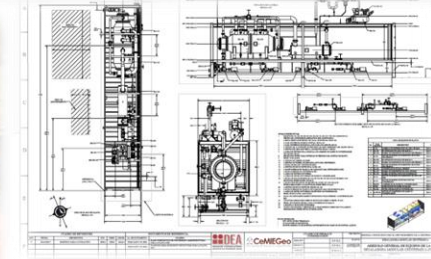


MISSION

TO PROVIDE SOLUTIONS IN A SUSTAINABLE WAY USING CLEAN ENERGY THROUGH TECHNOLOGICAL DEVELOPMENT, SPECIALIZED HUMAN RESOURCES TRAINING AND KNOWLEDGE DISSEMINATION.

VISION

BE A MULTIDISCIPLINARY GROUP THAT PROVIDES INTEGRAL SOLUTIONS TO FOOD, WATER AND ENERGY SECTORS, THROUGH APPLIED RESEARCH. BY CONSOLIDATING MEXICAN TECHNOLOGY WE ARE LOOKING FORWARD TO BUILD THE FUTURE BY RENEWING IIDEAs.

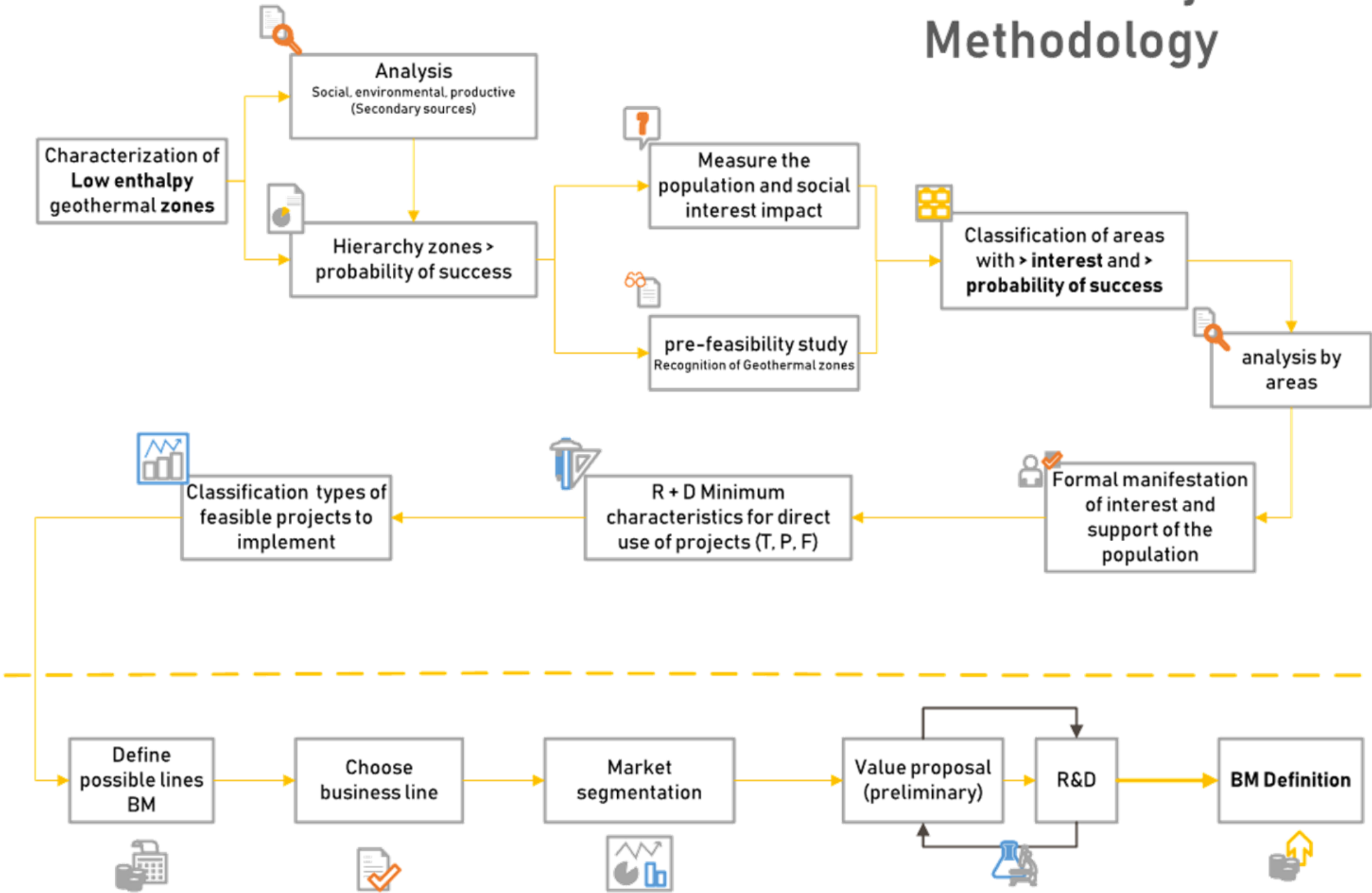


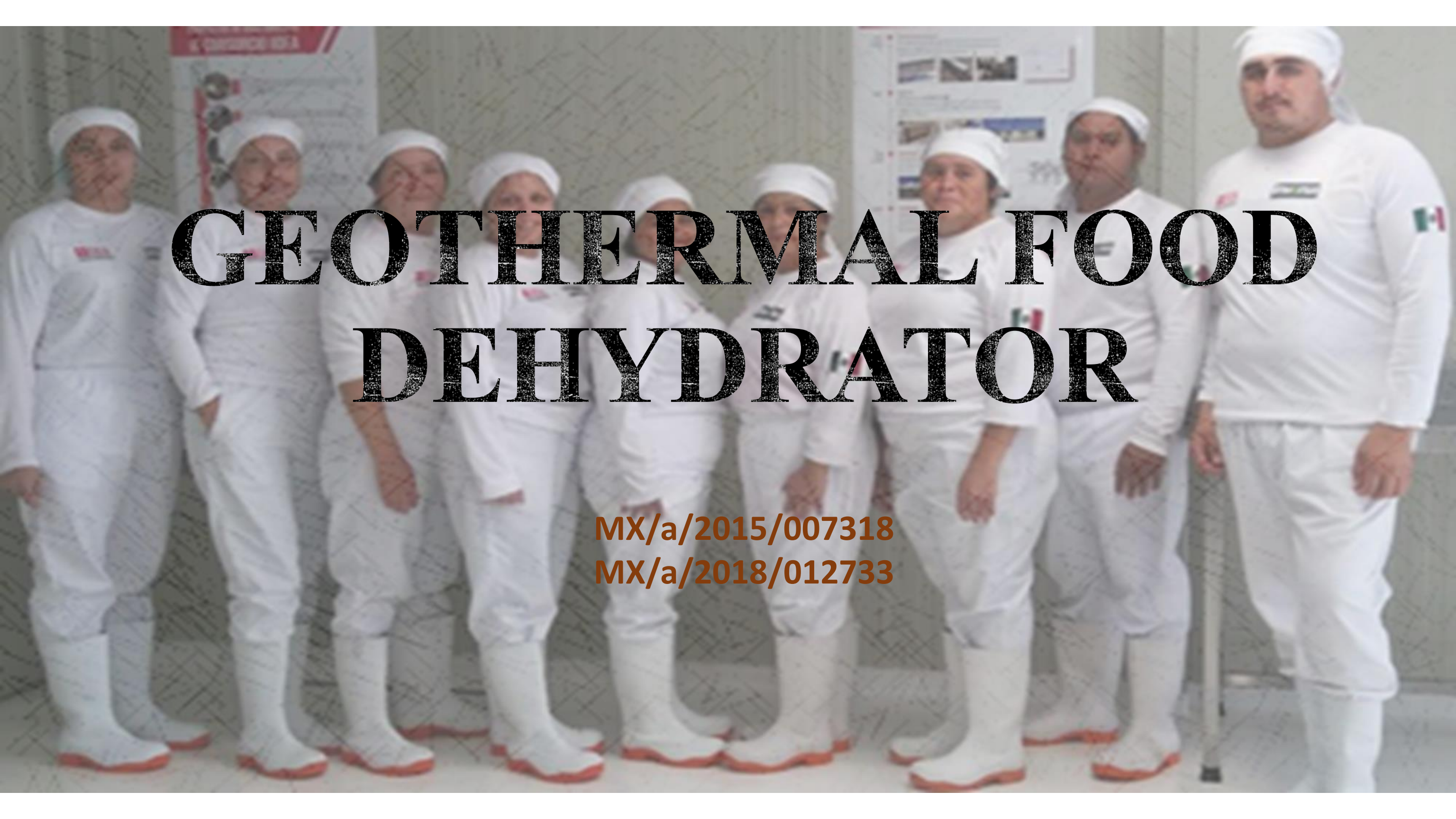


MULTIDISCIPLINARY GROUP



Direct Use Projects Methodology



A group of nine people, likely a food safety team, are standing in a line. They are all wearing white protective suits, including long-sleeved shirts, pants, and tall white rubber boots with red soles. They are also wearing white hairnets. The background is a plain, light-colored wall with some posters or notices pinned to it. The text "GEO THERMAL FOOD DEHYDRATOR" is overlaid in a large, bold, black, distressed font across the center of the image.

GEO THERMAL FOOD DEHYDRATOR

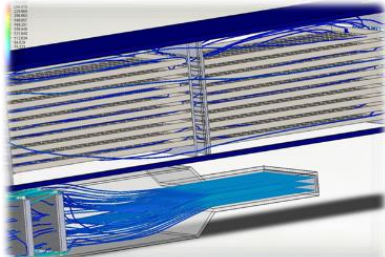
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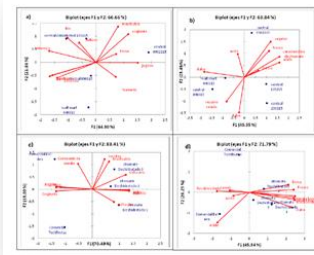
PROJECT DEVELOPMENT

2012-2016



DGA10 (prototipo)
Laboratory tests were carried out, equipment was characterized, and operation curves were determined for each of the proposed products.

UNAM-iiDEA-CeMIE-geo



2018-2019

DGA200

15 jobs were generated approx. The scaling and installation of a system of greater capacity, 200 kg of product per day was carried out.

iiDEA-INGENERA-CeMIE-geo



2017

DGA10

5 jobs were generated.

The DGA was installed in the field of the San Pedro Dome, with the capacity to dehydrate 10 kg of product.

UNAM-iiDEA-CeMIE-geo



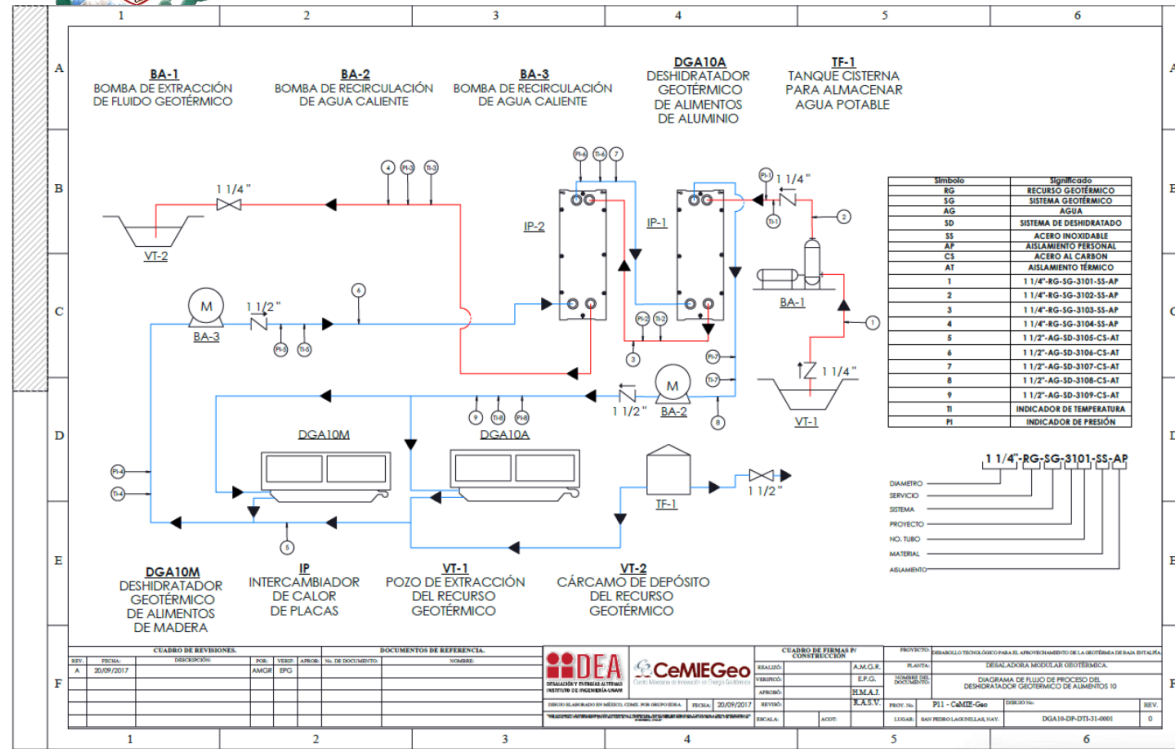
2020-2023

DGA600

60 jobs are generated approx. It is expected to increase the production capacity, processing spaces and equipment installed in the DSP to dry 600 kg of fresh product

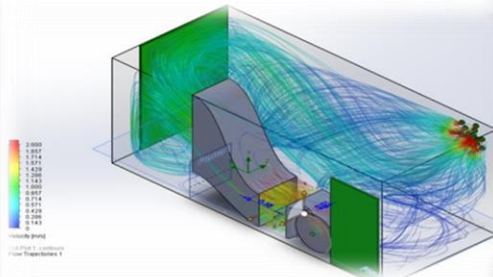
**iiDEA-
INGENERA-
PRODETES**







GFD 200





Deshidratador Geotérmico de Alimentos de Nayarit





Deshidratador Geotérmico de Alimentos de Nayarit





Deshidratador Geotérmico de Alimentos de Nayarit



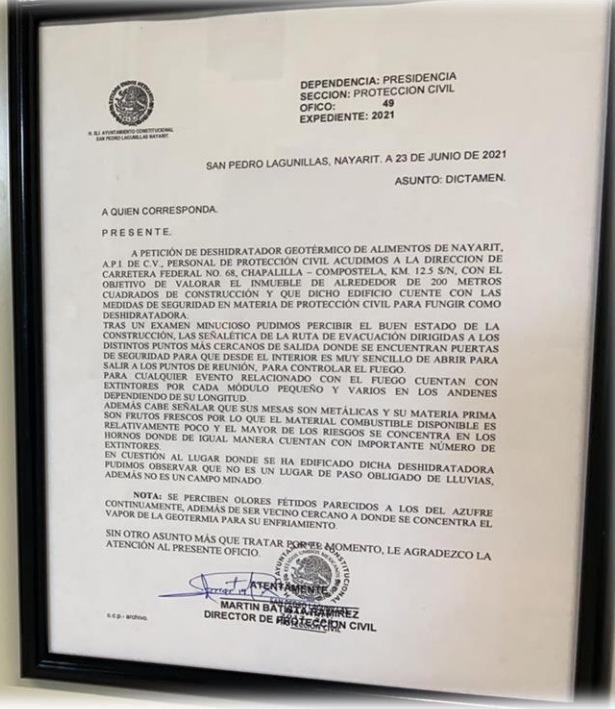


Geodry®



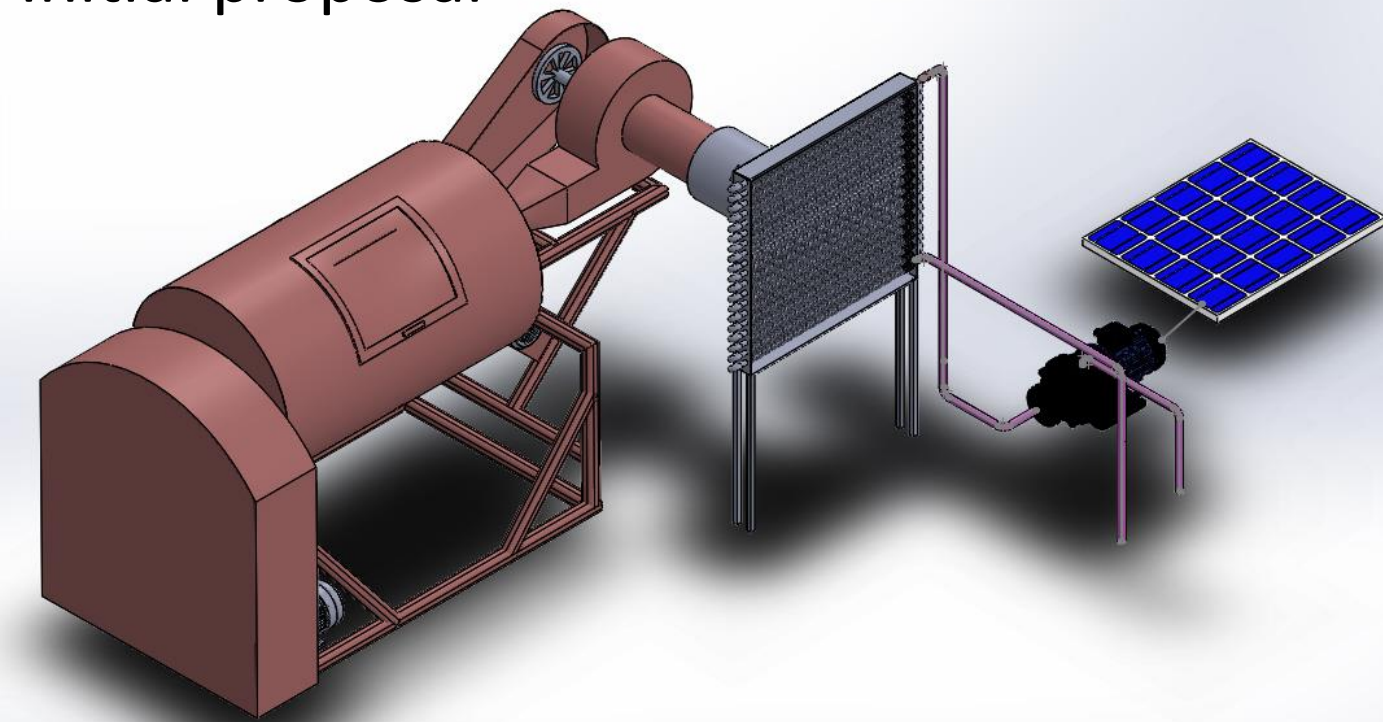
Del corazón de la Tierra al dulce fruto

<https://geodry.com.mx/>



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Initial proposal



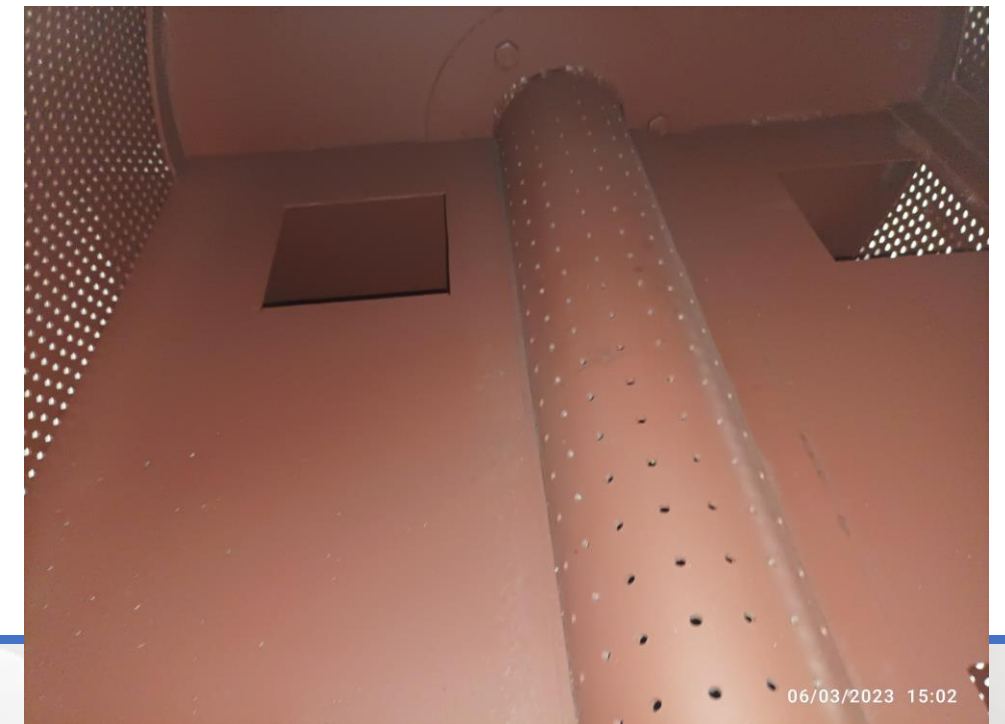
Prototype Manufacturing



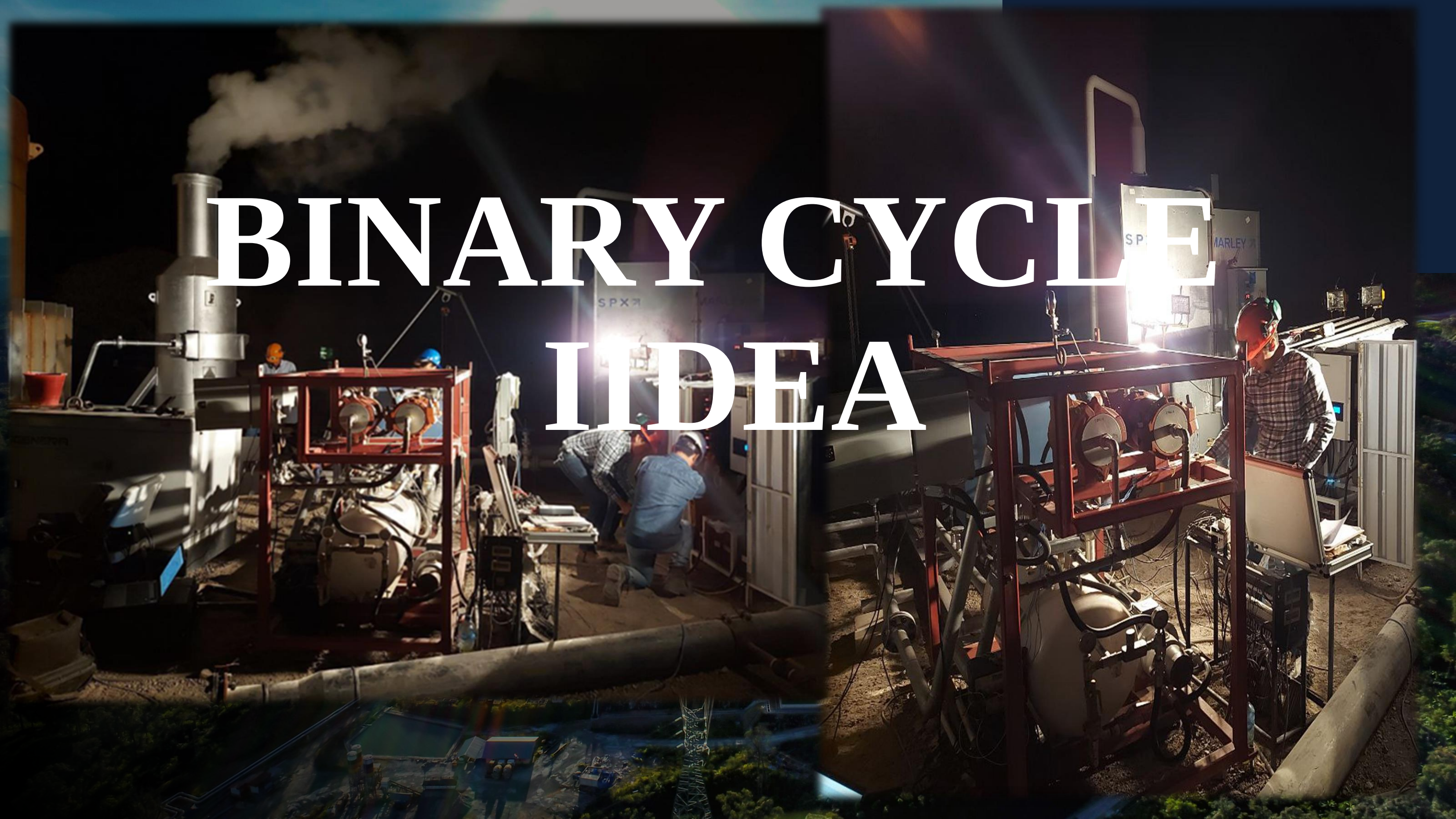
Laboratory Tests



Inside the drying chamber



BINARY CYCLE IDEA





IIDEA-10KW







GRUPO
DRAGON

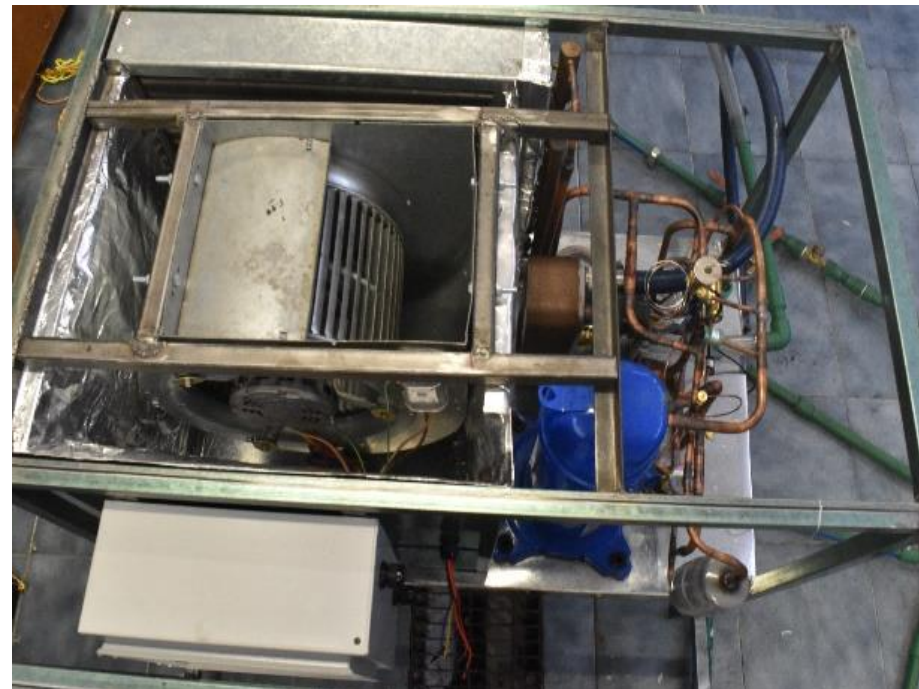
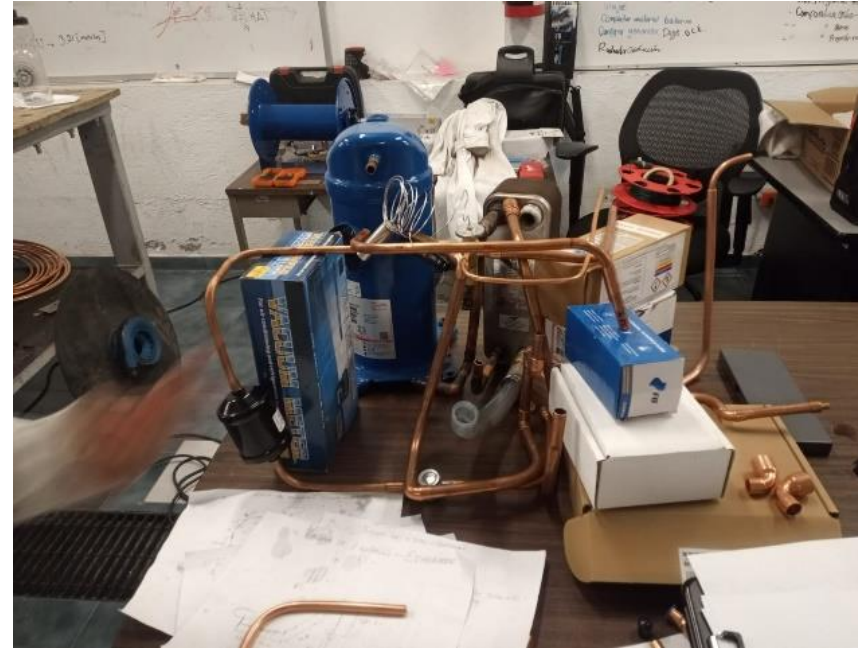
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HEAT PUMP MEX



Manufacturing Processes





FIELD TESTS "LOS HUMEROS" PUEBLA MEXICO

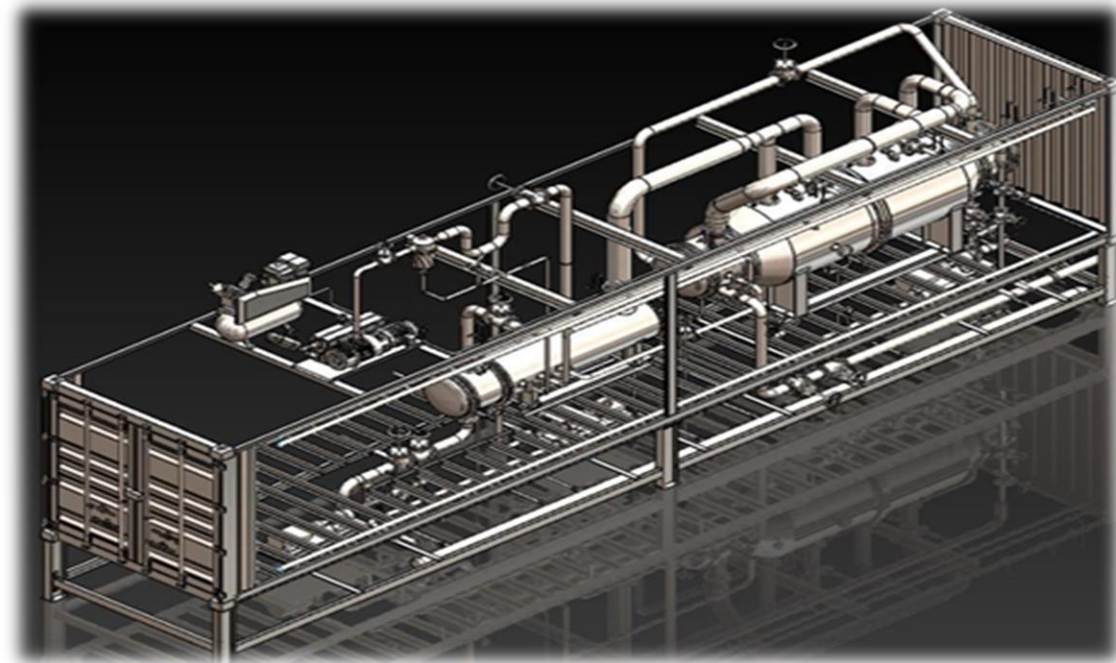
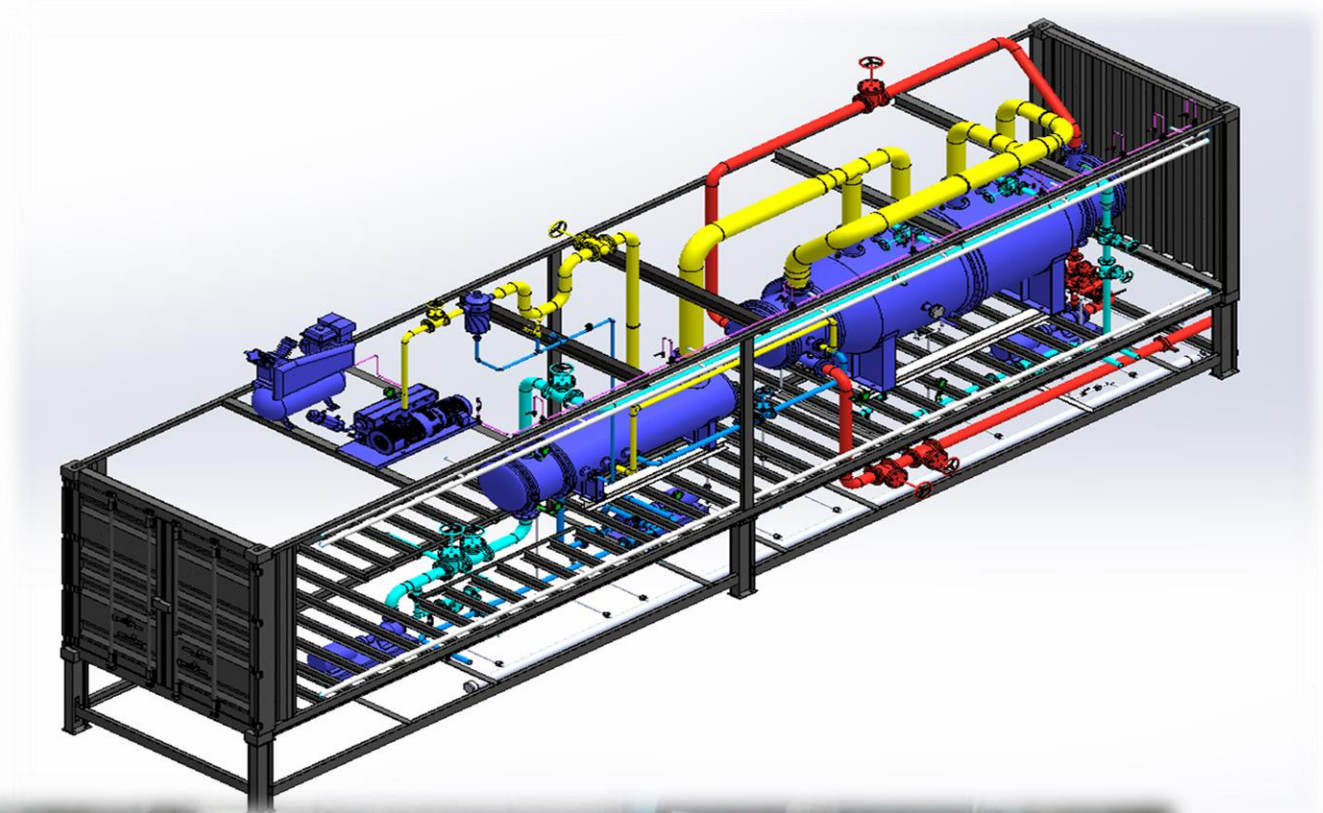
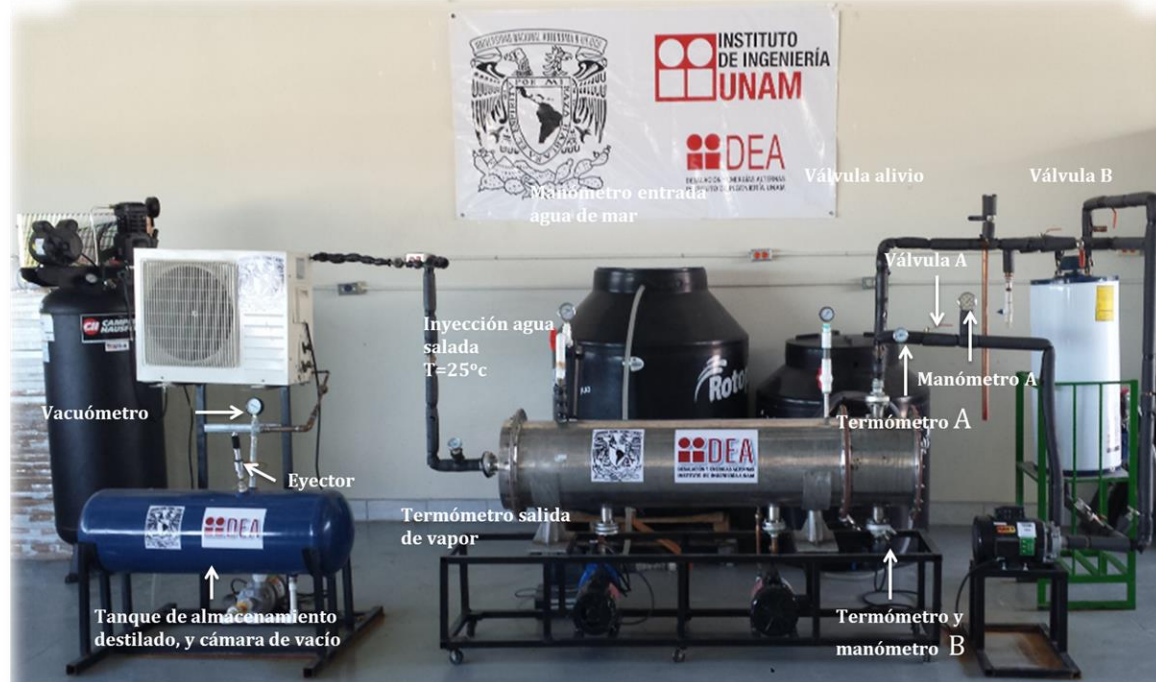




GEO THERMAL MODULAR DESALINATION



DMG 40m³/day





LOS CABOS - TESTING SITE



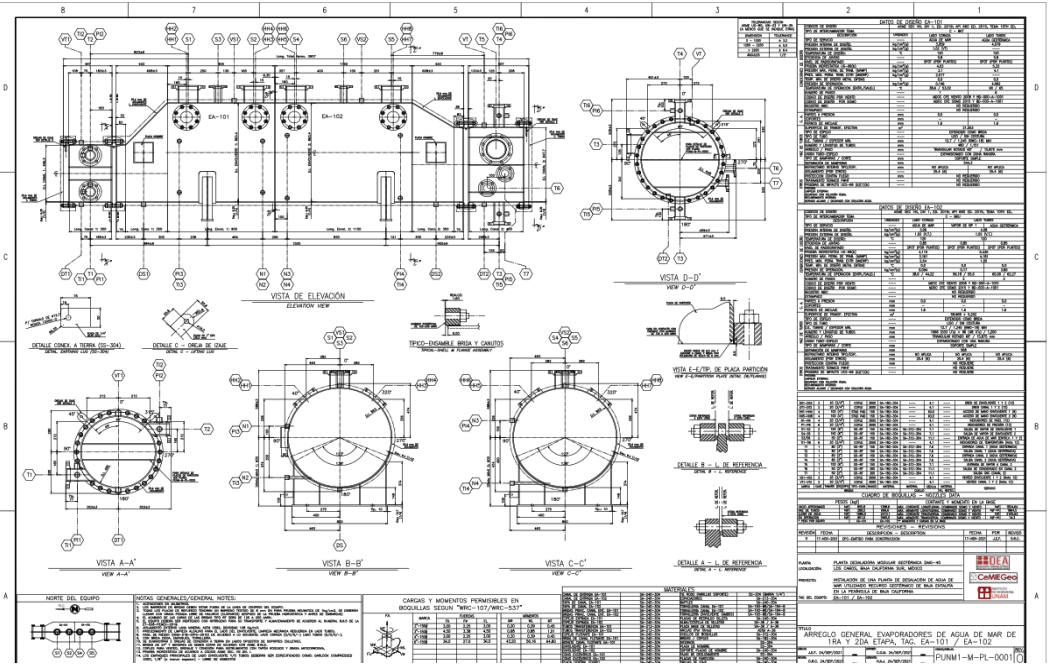
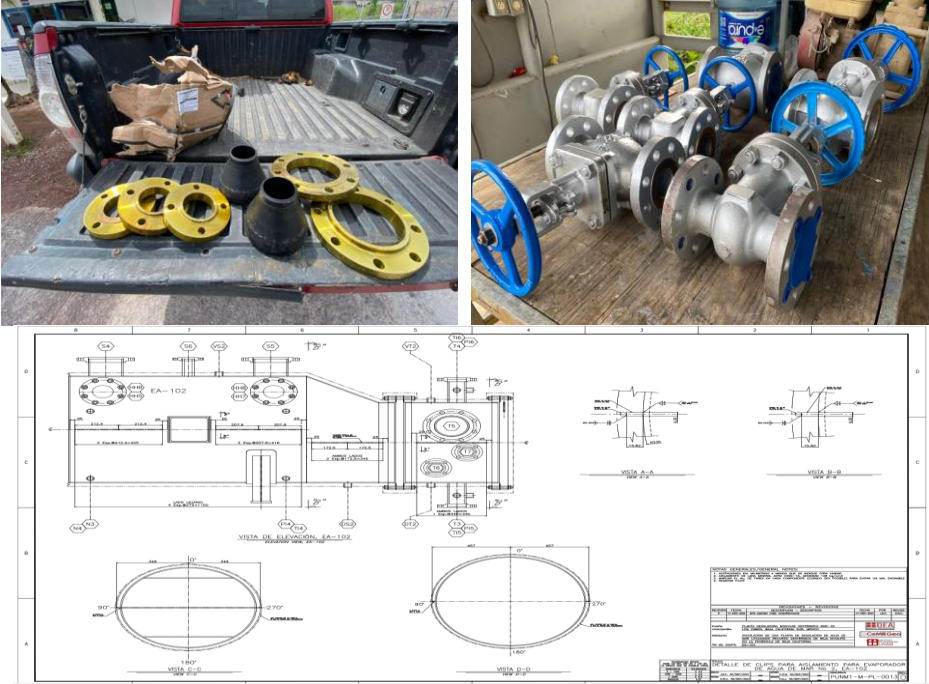
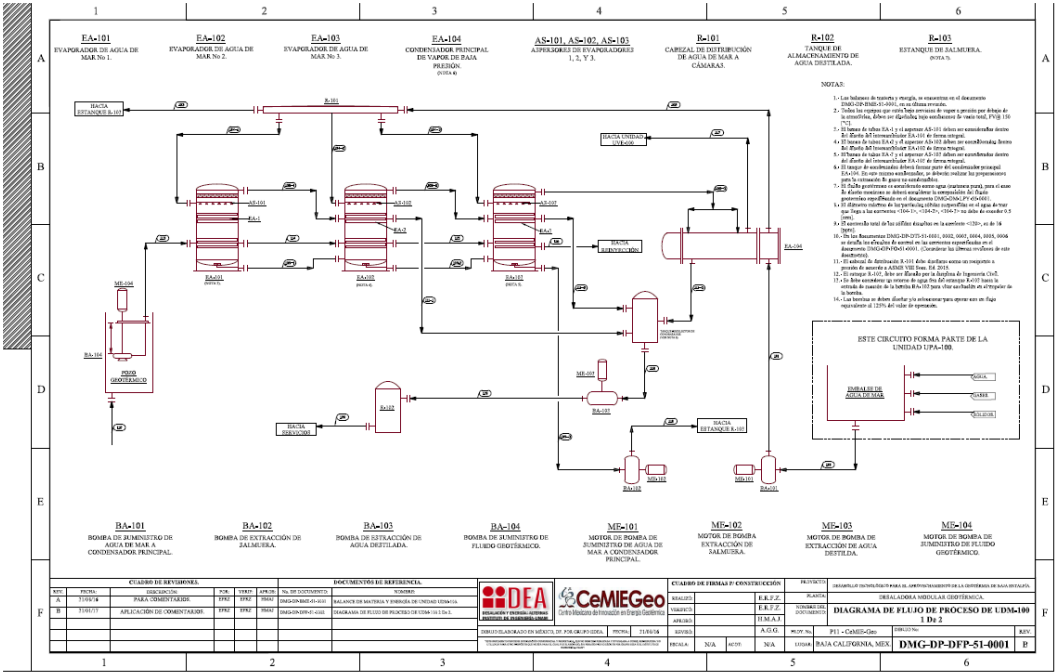
1 millón de gal/día





ADVANCES IN PLANT ENGINEERING, PROCUREMENT, AND MANUFACTURING

Percent Progress 60%





GEO-BEER PRODUCTION (CRAFT BEER)



NATIONAL AGRICULTURAL



VANILLA
AMARANTH
CHILE
BLUE CORN
RED CORN
SWEET POTATO
NOPAL







**USOS DIRECTOS DE
LA GEOTERMIA**



**TRABAJO
24/7 =
GEOTERMIA**



IDEA GROUP IINGEN

Red Ale IPA Stout

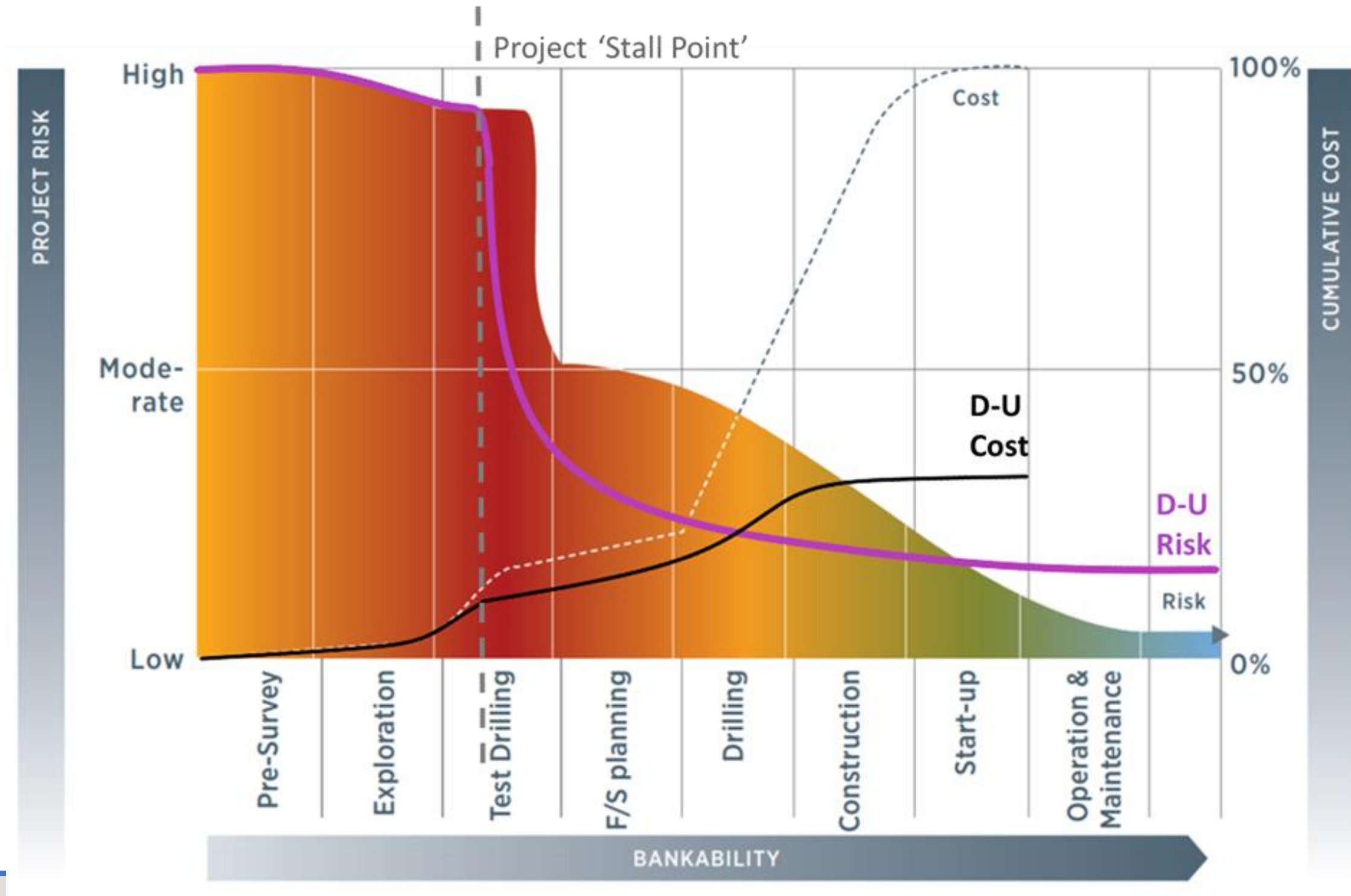


Todo con medida



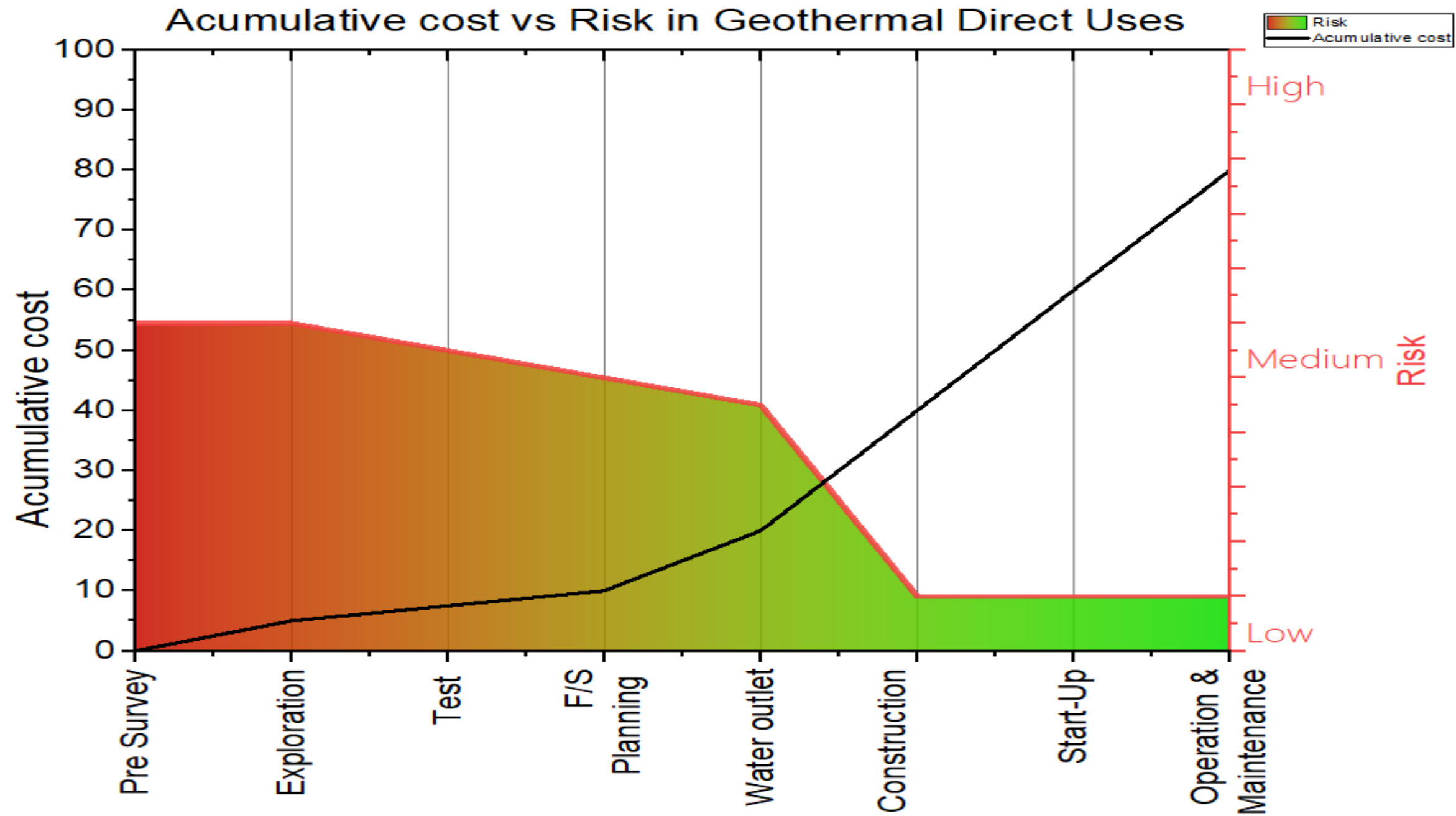


PROFITABILITY





RIESGO EN PROYECTOS GEOTÉRMICOS





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THANK YOU!

Dr. Héctor Aviña Jiménez
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BUILDING THE FUTURE RENEWING IIDEAS

TLAZOHCAMATI
GEOLOVERS

Tlazohtla= love

Mati= wisdom or knowledge



/GrupoiIDEA



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