



inventivepower.com.mx

Webinar: Concentrating Solar Heat: Lessons learned in Mexico



Company:



Aldo Agraz Huitrón

Co-founder Inventive Power
Chief Technology Officer
M.Sc Energy Engineering



Angel Mejía Santiago

Co-founder Inventive Power
Chief Executive Officer
M.Sc Energy Engineering

+ 40 collaborators specialists in their areas helping the company to fulfill our mission

R&D Support



Biz Support



Awards

Eco-Entrepreneur



Top 15 Latin American companies OEA
"Eco-Entrepreneur 2013"



The Tech Awards

The tech Museum of Innovation
2014

"Intel Award for the Environment"



Banamex

Finalist

Banamex award

"Sustainable Company 2014"



TIC Americas 2012
Talent and Innovation Challenges of the Americas

Finalists at the America level
"TIC Américas 2012"
Summit of the Americas,
Cartagena, Colombia.



Second place at America level
"Intel Challenge 2012"



Intel Global Challenge
at UC Berkeley

Finalist worldwide
(Top 8)



From the best 8
company



3rd place at national level
"Solar Entrepreneur Award 2009 "



Second place at America level
"FTF Design Challenge América 2009"

Press coverage

CNN EXPANSION

SoyEntrepreneur.com

MILENIO
Diario

REFORMA
Diario

MURAL
EXPRESIÓN DE JALISCO

CNN EXPANSION



ISO 9001:2015 Certification achieved



CERTIFICATE

SIGE as an IQNet Partner hereby states that the organization:

INVENTIVE POWER, S.A.P.I. DE C.V.

SEDE Volcán Cofre de Perote No. 5189, Col. El Coll Urbano, C.P. 45070, Zapotlán, Jalisco, México.

for the following scope:

Design, Manufacture, Commercialization, Installation and Maintenance of Energy Generation Systems with Solar Energy for its Operations in México

has implemented and maintains a
Quality Management System
which fulfils the requirements of the following standard

ISO 9001:2015

Issued on: **2018-12-14**

First issued on: **2018-12-14**

for the validity date, please refer to the original certificate issued by SIGE

Registration Number: **MX-2018CRE-726**

 
Alex Stochitola
President of IQNet


Pedro CANO CALDERON
General Director of SIGE



IQNet Partners**

AFNOR Spain, AFNOR Certification France, APCER Portugal, CCC Cyprus, CISO Italy,
CQC China, DQM China, CQS Czech Republic, Eri-Cert Croatia, DQS Holding GmbH Germany, PCAV Brazil,
PONDONORMA Venezuela, ICONTEC Colombia, Inspecta Certification Finland, INTECO Costa Rica,
IRAM Argentina, JQA Japan, KPS Korea, NHTK Greece, MSZT Hungary, NENKO AS Norway, NSAI Ireland, PCBC Poland,
Quality Austria Austria, IR Mexico, SIGE México, SII Israel, SIO Slovenia, SRM QMS International Malaysia,
SQS Switzerland, BRAC Romania, TISST SI, Piter-Shang Russia, TSE Turkey, Vingroup Belgium, YUQS Serbia,
IQNet is represented in the USA by: APNOR Certification, CISO, DQS Holding GmbH and NSAI Inc.

* This attention is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document

** The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com



CERTIFICADO DE REGISTRO

NYCE Sociedad Internacional de Gestión y Evaluación, S.C
organismo acreditado con el número 85/12, por la
Entidad Mexicana de Acreditación (EMA), certifica que el
Sistema de Gestión de la Calidad:



INVENTIVE POWER, S.A.P.I. DE C.V.

Calle Volcán Cofre de Perote No. 5189, Col. El Coll Urbano, C.P. 45070, More, Zapotlán, Jalisco, México.

Cumple de conformidad con los requisitos de la Norma:

NMX-CC-9001-IMNC-2015 / ISO 9001:2015

Con el siguiente alcance:

Diseño, Fabricación, Comercialización,
Instalación y Mantenimiento de
sistemas de generación de energía con
Energía Solar.



CERTIFICADO No. 2018CRE-726

Fecha de emisión: 2018-12-14

Vigente al: 2021-12-13

1ª. Emisión: 2018-12-14

A Partner of




Pedro CANO CALDERON
Director General

El presente certificado es propiedad de SIGE y deberá ser almacenado de inmediato bajo solicitud expresa, de acuerdo con el "Reglamento de uso de la marca SIGE". Se puede consultar la autenticidad del certificado contactando directamente al personal del departamento de Certificación de Sistemas de Gestión. Cuando existan solicitudes adjuntas al certificado, estos forman parte integral del mismo y deben ser todos como un solo documento. El presente certificado es válido siempre que se complete mediante permanente cambios requeridos bajo los cuales se elige, salvo sustitución o retiro notificado en tiempo por SIGE.

FIC000010-01-01

Direct Solar Radiation in México

Irradiación Directa Normal

México



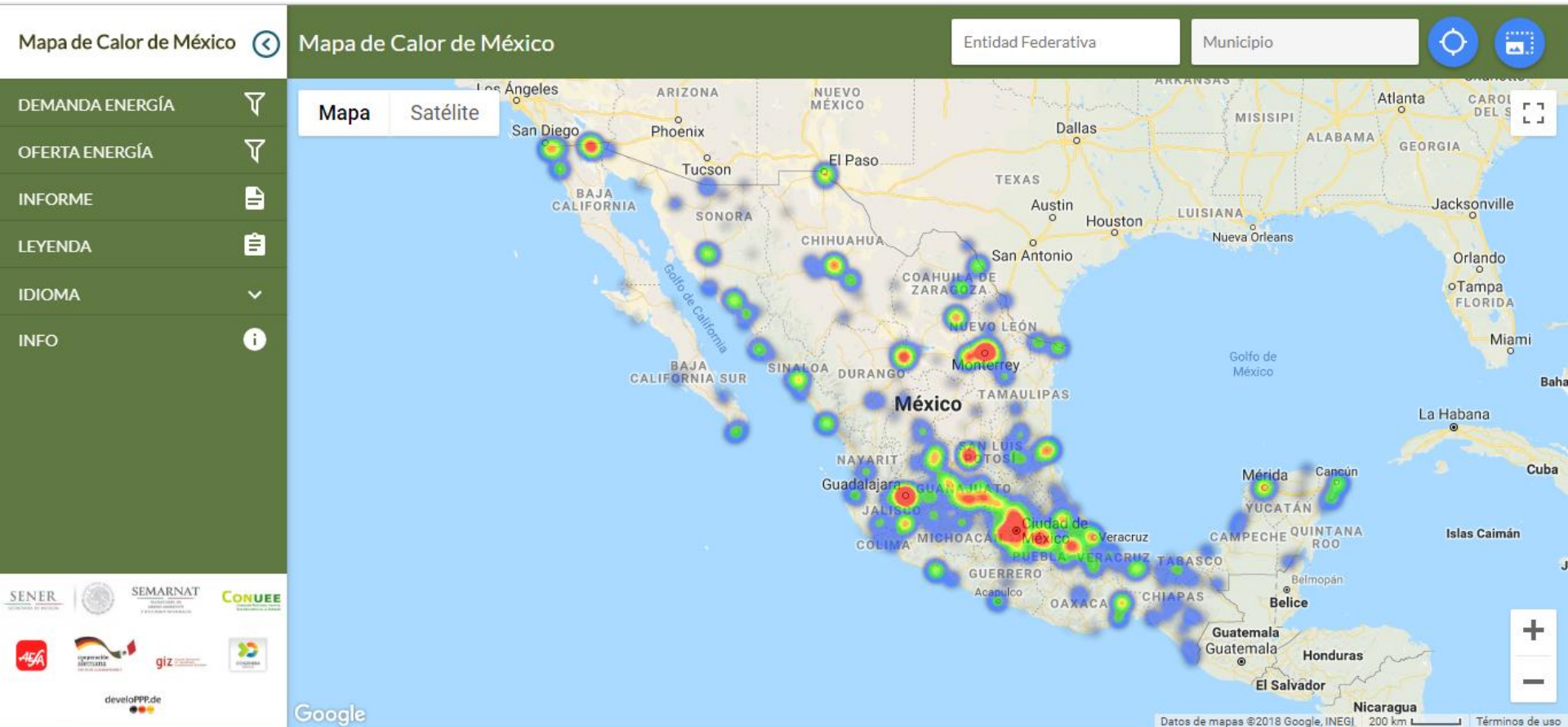
Media de la suma anual, periodo 1999-2013



< 1200 1500 1800 2100 2400 2700 3000 > kWh/m²

0 200 km

Mapa Solar de DNI © 2014 GeoModel Solar



<http://mapacalormx.dyndns.org:8079/>

What do these products have in common?



That they need large amounts of thermal energy for their manufacture!



Market Opportunity

In Mexico there are 32,000 installed boilers and water heaters

Potential market in Mexico:

+\$1.2 Billion USD

Industries with potential



Food



Dairy and
Derivatives



Distillers



Farming



Chemistry



among others



Drinks



Textile



Pharmaceutical



Hotels



Hospitals



Power Trough 110/250[®]

60-250°C Process heat generator



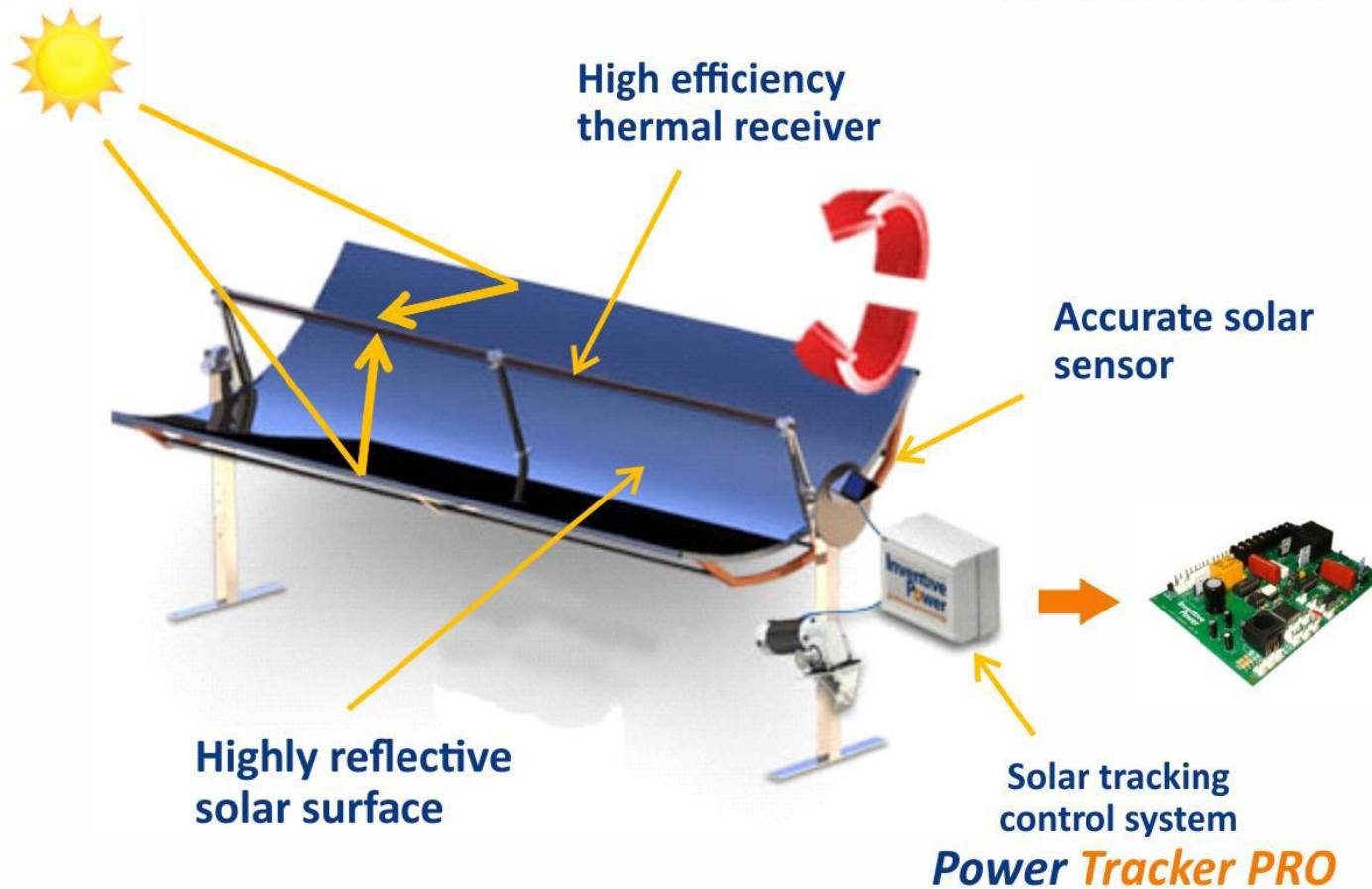
Mexican patent: MX/A/2012/003407

US patent: US/2015/0122309

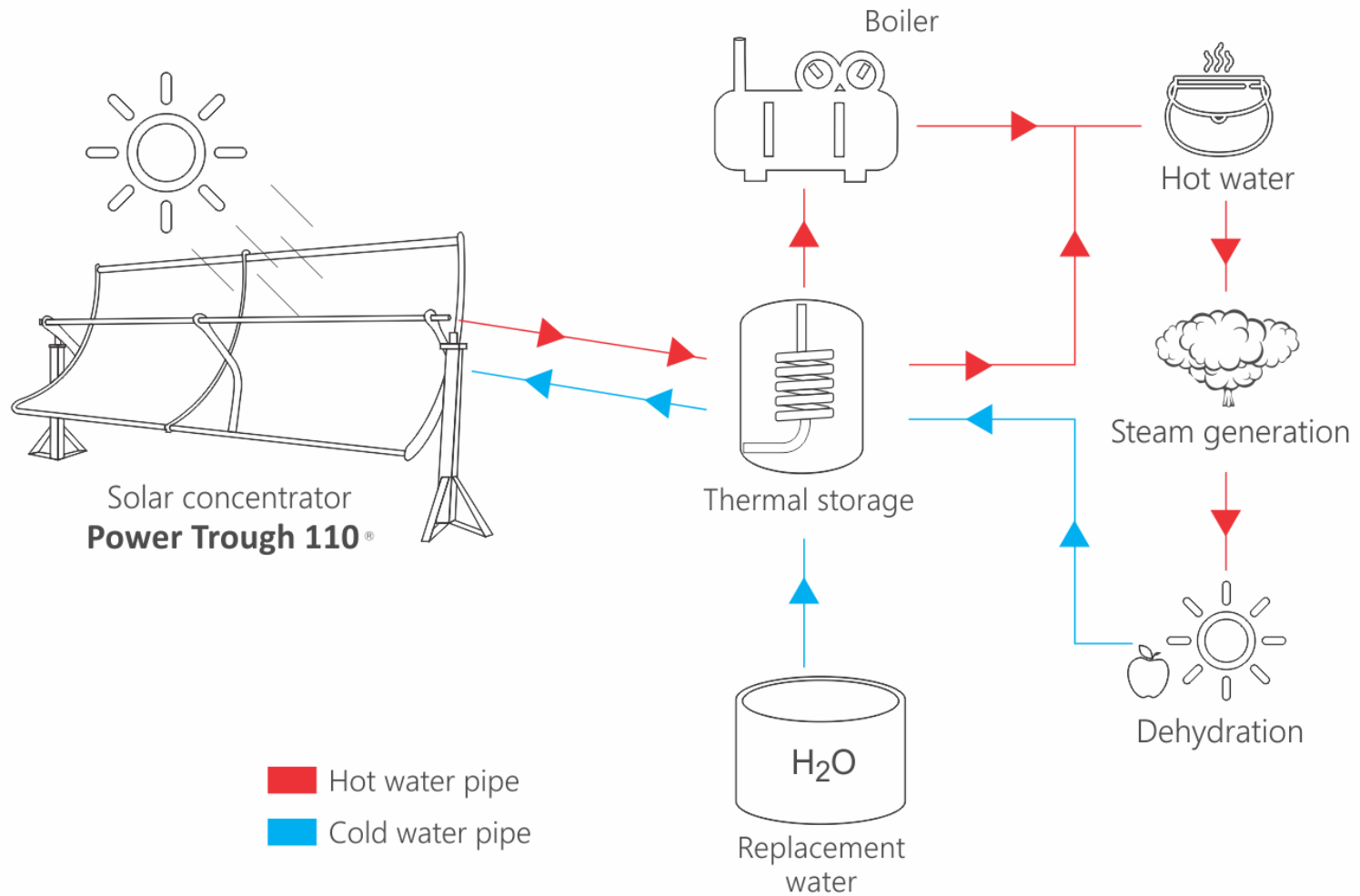


PowerTrough®

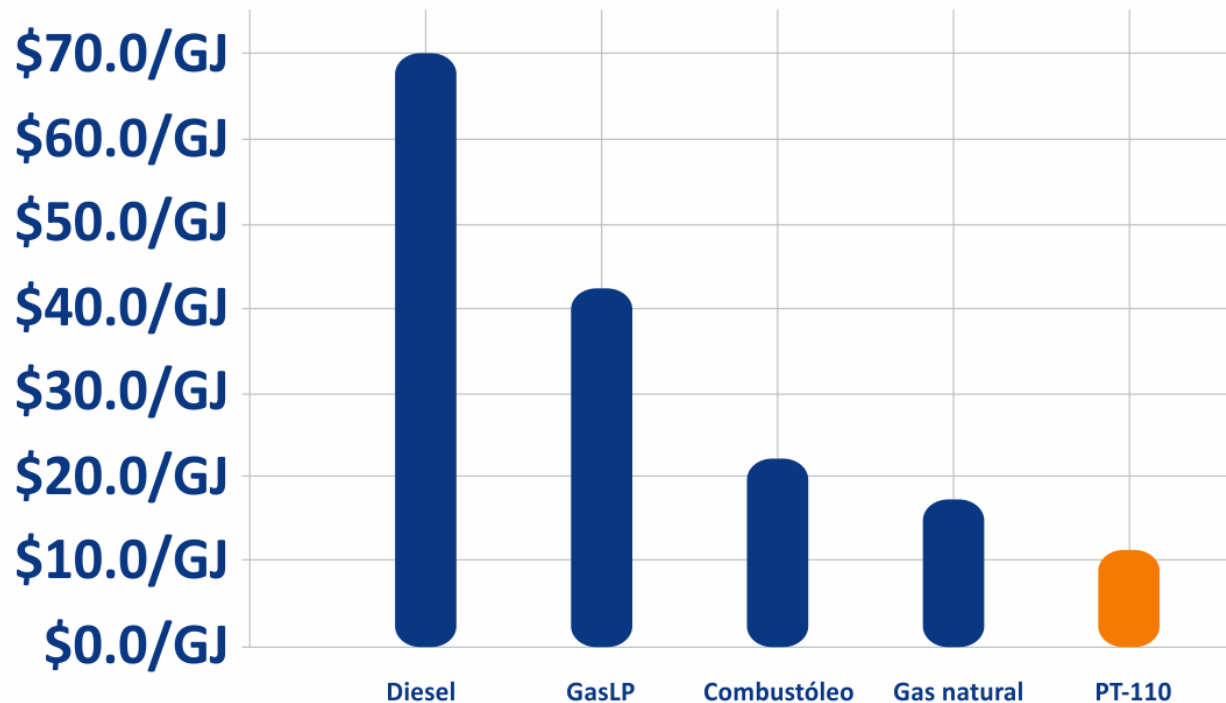
How it works



Process Integration



**Power Trough,
the cheapest
way to
produce
Heat**



Impact of Technology

Reduction of up to 80% in fuel consumption to generate thermal energy, helping companies to become more competitive

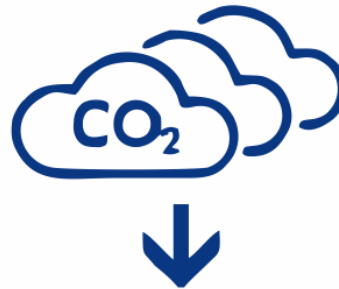
Metrics: Total amount of savings in fuel consumption

Co2 reduction emissions into the atmosphere

Metrics: Reduction of tons of Co2



Our projects installed to date save amounts exceeding half a million dollars annually



Our projects installed to date reduce +2,000 tons of CO₂ per year, equivalent to taking 420 cars from circulation



More than 100 projects installed in México in 24 States





Nestlé, Lagos de Moreno, Jalisco
Dairy Plant
140 Power Trough 110
Hot water for Industrial Processes
Payback Period: 4 years





Canel's®

Canel's México, San Luis Potosí, SLP
Candy Producer
80 Power Trough 110
Hot water for Industrial Processes
Payback Period: 4.5 years





Lechera Guadalajara (Sello Rojo), Guadalajara, Jalisco
Milk Producer
130 Power Trough 110
Pasteurization Process
Payback Period: 4 Years





CASA
ARMANDO
GUILLERMO
PRIETO

CASA ARMANDO GUILLERMO PRIETO, Oaxaca, Oaxaca
MEZCAL PRODUCER
100 Power Trough 110
Boiler Preheating
Payback Period: 2 Years





Jose Cuervo

JOSÉ CUERVO, Guadalajara, Jalisco
Tequila Producer
74 Power Trough 110
Boiler Preheating
Payback Period: 2 Years



Solar Steam Generation for Dairy Company In San Roque, Guanajuato



The company FAMO Alimentos will be first one in Mexico by using solar direct steam to their dairy process, producing 3.5 TONs of Steam Daily for pasteurization.



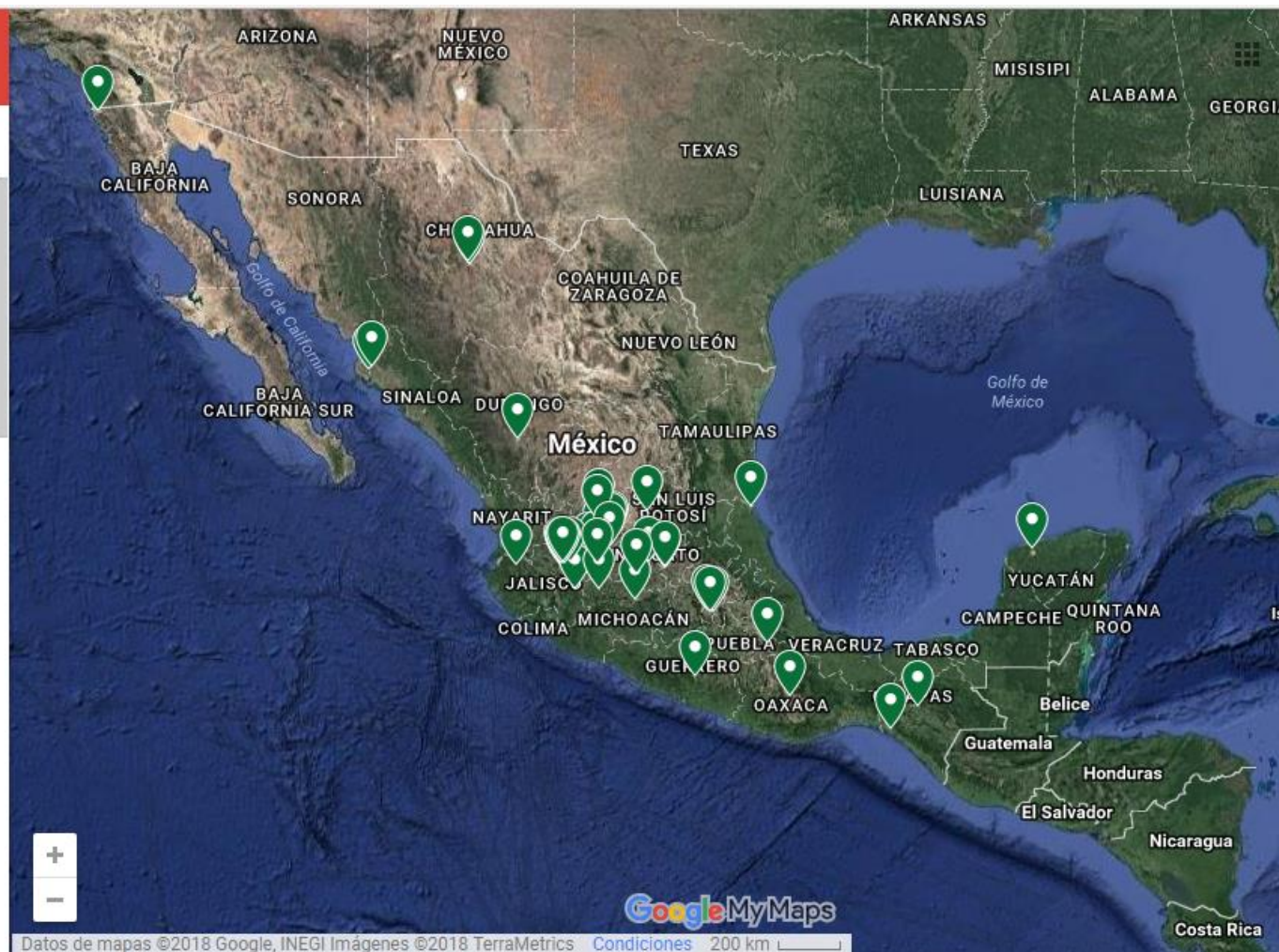
Proyectos Instalados



Proyectos Instalados PT

Todos los elementos

Nestle Chiapa de Corzo
Nestle Lagos de Moreno
Lechera Sello Rojo
Canel's de México
Casa Cuervo
Casa Armando Guillermo Prieto
Destilería 501
PAISA
Agropecuaria Tarasca
Alimentos y Productos para Ganado ...
Enfriadora Jaliciense
Carnes Finas de Sonora (CAFISON)
Rastro Montes Azules
Rastro Garibay
COMFOSA
SUEMA





**Sell projects with
Power Trough®**

**Business
Representatives**

cash payment

Direct sale
(Financial services)

Financing/Leasing
(Financial partners)

**Sell Thermal
Energy (2019)**

Direct sale
(Enterprises Corp)

**Monthly payment
for energy generated**
(\$/GJ)

**O & M Services
& Parts**

Direct sale

**Maintenance policies,
spare parts**





LOCALIZACIÓN:

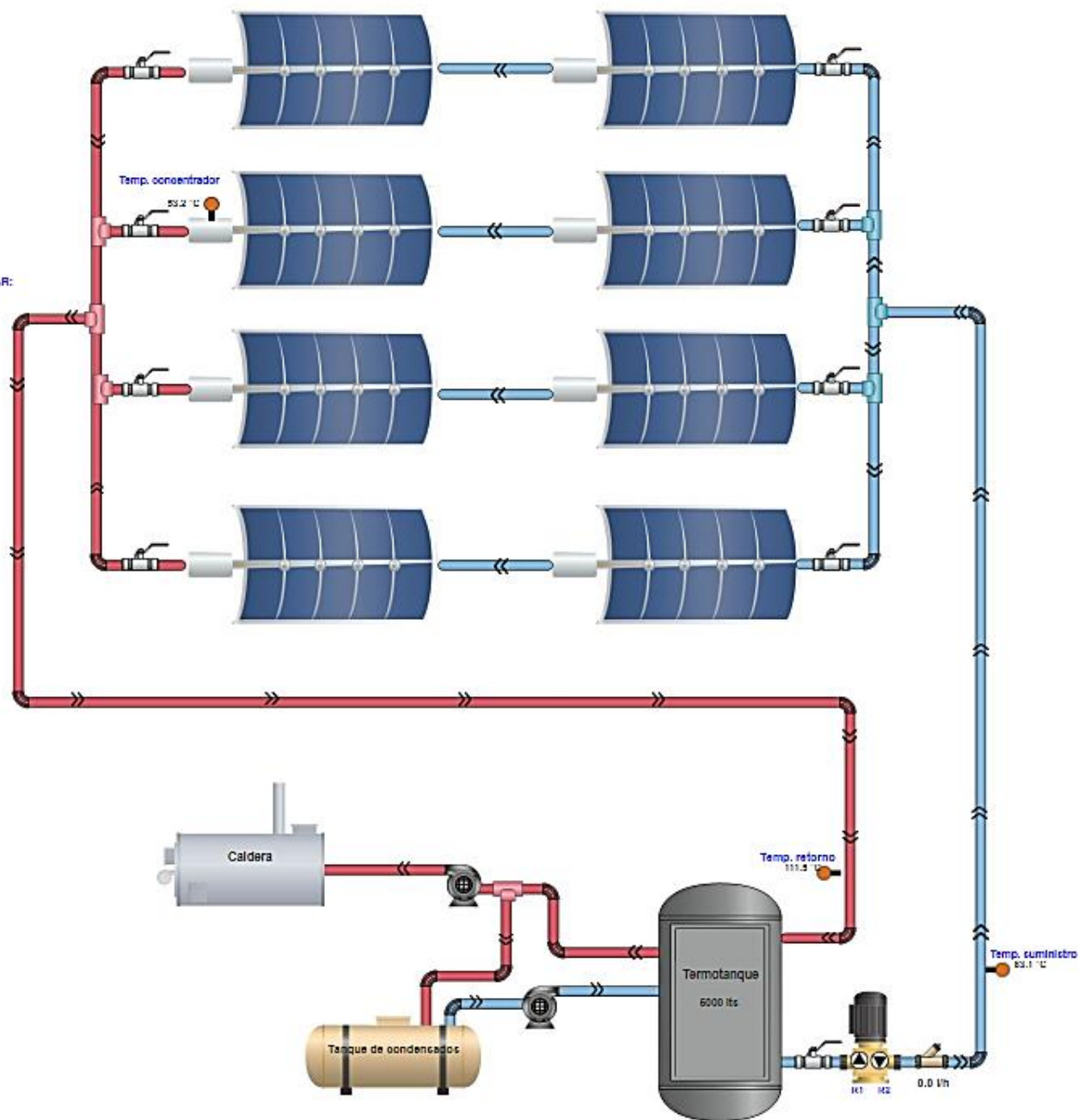
Jacona de Planaorte, Michoacán

NO. DE CONCENTRADORES:

80 concentradores

MODELO DE CONCENTRADOR SOLAR:

Power Trough 110v 2.8



Radiación Solar

0 W/m²



Fecha y hora del sistema

02/04/2018 19:16:56

Inventive Power

Breaking new ground in Energy

ING. DE PROYECTO:

Ing. Brenda Ballesteros

FECHA DE INSTALACION:

10/10/2017

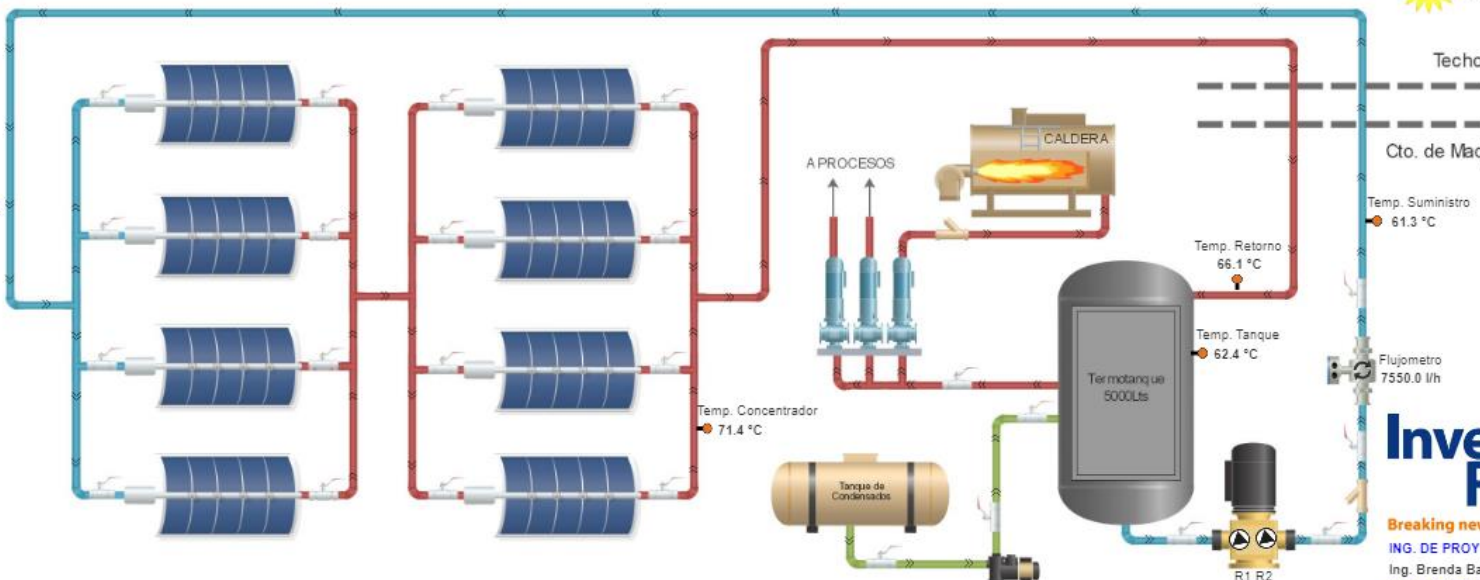
CONTACTO:


e-mail: contacto@inventivepower.com.mx

Tel: 01 (33) 1371-3126

Nota: se muestran dos relé en la bomba pues el control se realiza por medio de los mismos a manera de OR. Si hay radiación mayor a 500w/m² R1 encenderá la bomba o si hay una delta de temperatura mayor a 6° entonces R2 la encenderá.

LOCALIZACIÓN:
Mochicahui, Sinaloa
NO. DE CONCENTRADORES:
80 Concentradores
MODELO CONCENTRADOR SOLAR:
Power Trough 110 V3.2



 **Fecha y Hora**
09/11/2018 18:55:54

 **Radiación Solar**
584 W/m²

Techo
Cto. de Maquinas

Inventive Power

Breaking new ground in Energy

ING. DE PROYECTO:

Ing. Brenda Ballesteros

FECHA DE INSTALACION:

28/08/2018

CONTACTO:

e-mail: servicio@inventivepower.com.mx

Tel: 01 (33) 1371-3125

Nota: Se muestran dos relés en la bomba pues el control se realiza por medio de los mismos a manera de OR. Si hay radiación mayor a 500 w/m² R1 encenderá la bomba o si hay un delta de temperatura mayor a 6° entonces R2 la encenderá.



LOCALIZACION:

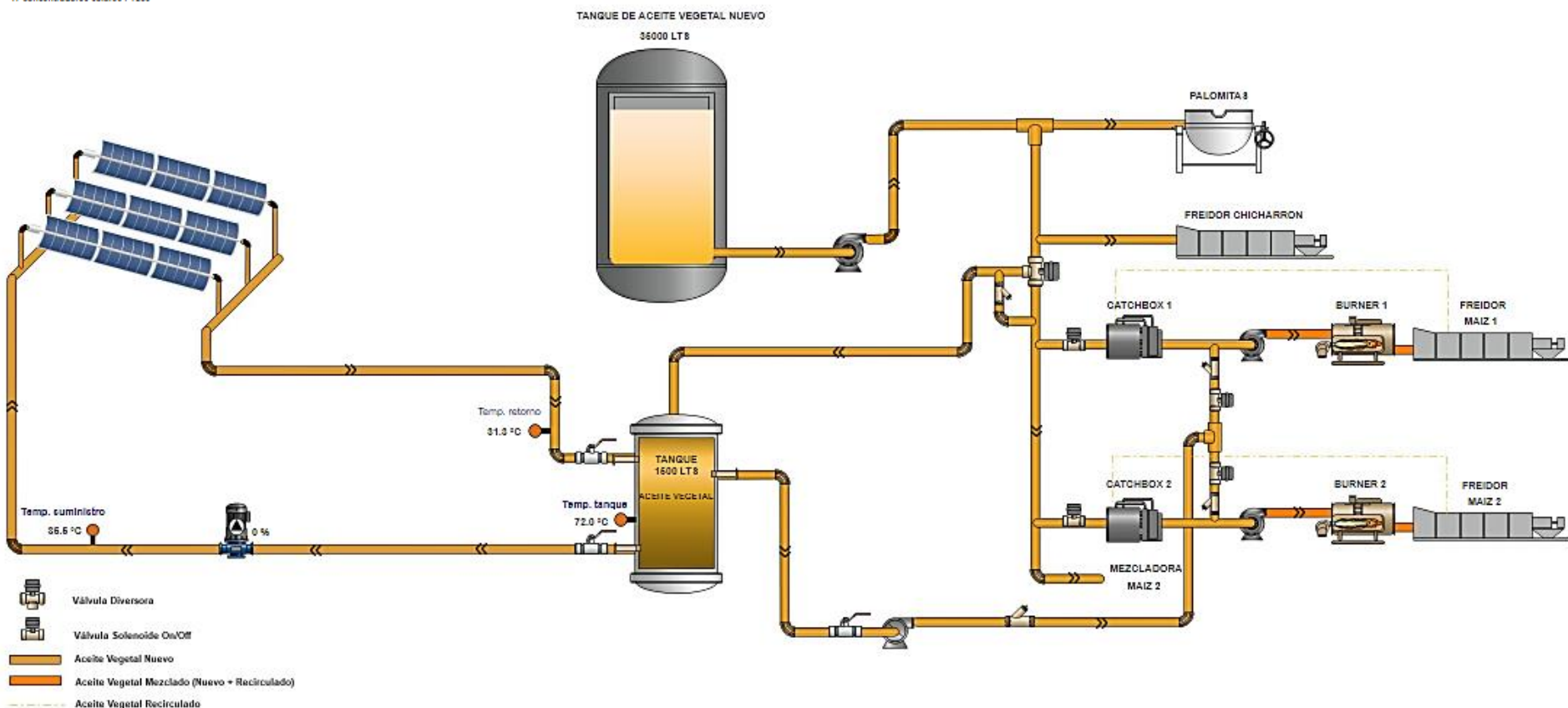
Mérida, Yuc.

MODELO DE CONCENTRADOR SOLAR:

Power Trough 260

NO. DE CONCENTRADORES SOLARES:

17 concentradores solares PT260



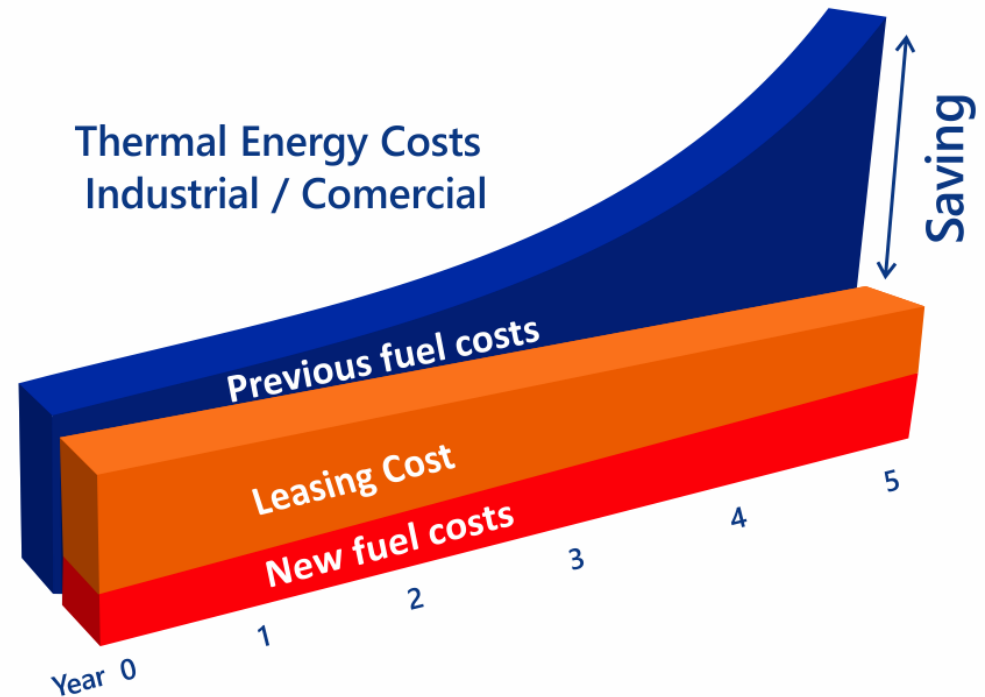
Heat Purchase Agreements (HPA)

Thermal energy sales



No initial investment

**"Heating as
a Service"**



Savings from the first month between 5-20%





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Zapopan, Jalisco.

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