TVP Solar Systems

the clean energy solution that saves money

Solar Process Heat

hot water @ 60-180C for industrial process

January 2020

Solar Process Heat Systems

the clean energy solution that saves money

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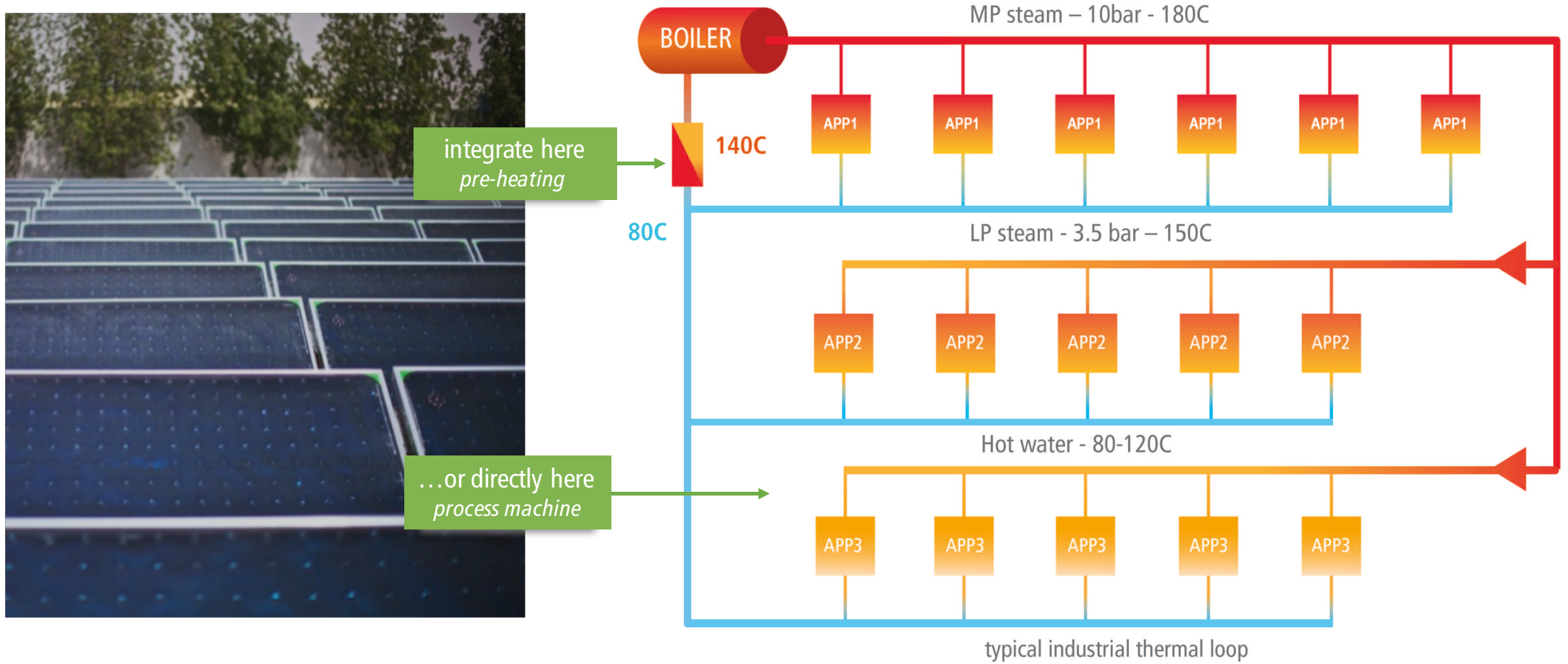
thermal energy. better

TVP Solar Heat System can be seamlessly integrated with existing thermal systems at different levels



Solar Process Heat Systems

MT-Power Collectors - main features

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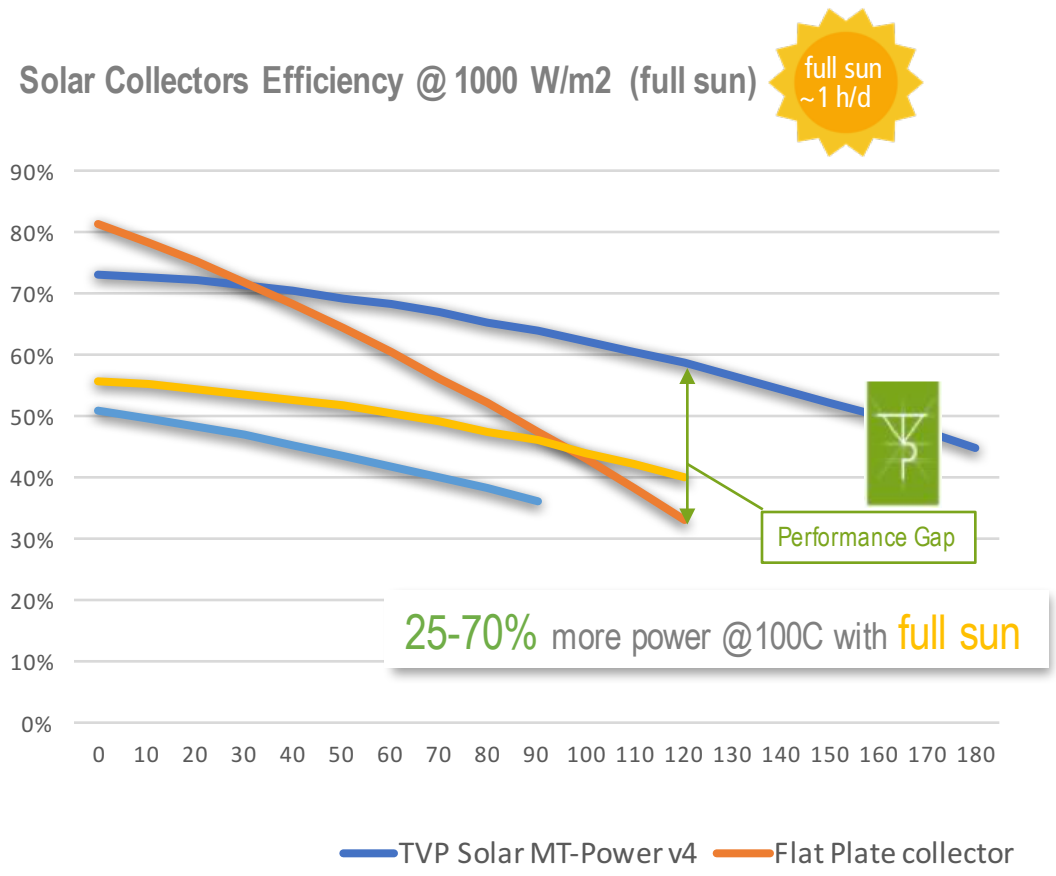
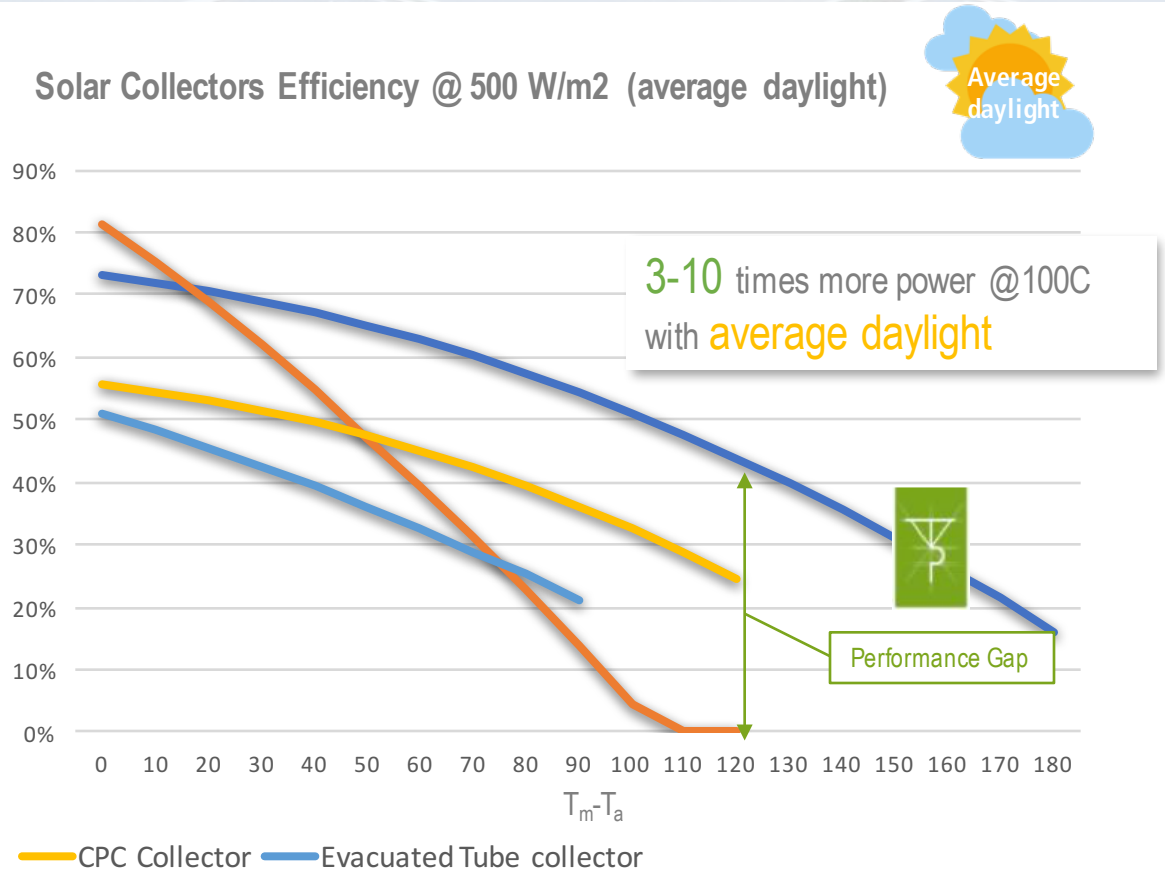
Best efficiency and energy output in any climate conditions, with any irradiance, at any operating temperature up to 200C Comparison with the most popular flat and evacuated collectors (SolarKeymark certified data)





Solar Process Heat Systems
track record

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ORF – Abu Dhabi

Installed Power	150	kW
Energy production	130	MWh/y
Operating T	170	°C
Installed since	Sep 2018	
Collector surface	240	m^2
Fuel saved (year)	16800	l/diesel

GHI (kWh/m^2/y)	1988
Solar avg,system eff.	37%
Working Hours	daytime
Storage	no

Solar Process Heat Systems
track record

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JEAN LARNAUDIE - France

Installed Power	1,040	kW
Energy production	1069	MWh/y
Operating T	140	°C
Installed since	march 2020	
Collector surface	1660	m^2
Fuel saved	130,800	m^3

GHI ($kWh/m^2/y$)	1378
Solar system eff.	53 %
Working Hours	daytime extended
Storage	40 m^3

Solar Process Heat Systems

measurable results

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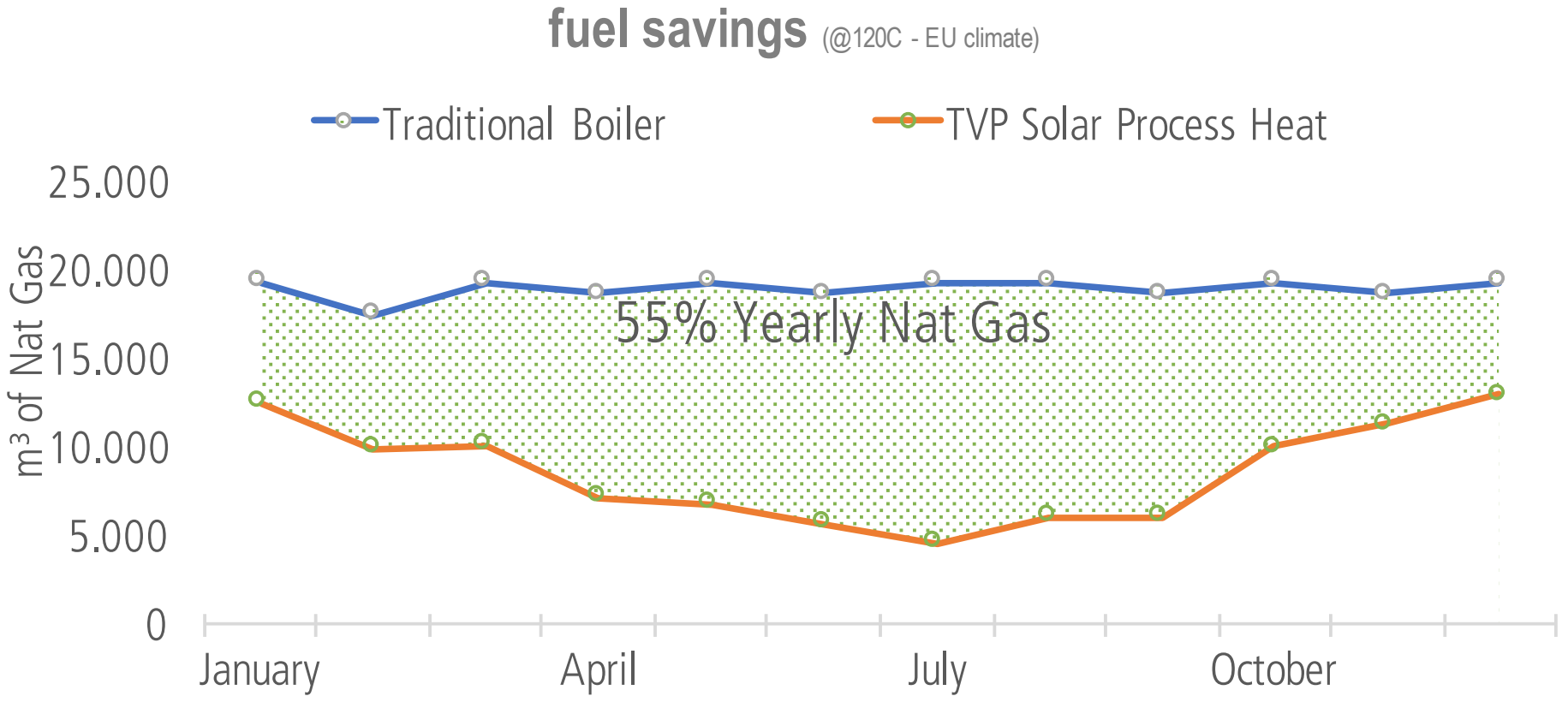

Solar Process Heat Systems

economics. real value

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typical setup

Collectors gross area	3,000 m^2
Footprint	5,400 m^2
Peak Power	1,800-2,100 kW

cost baseline

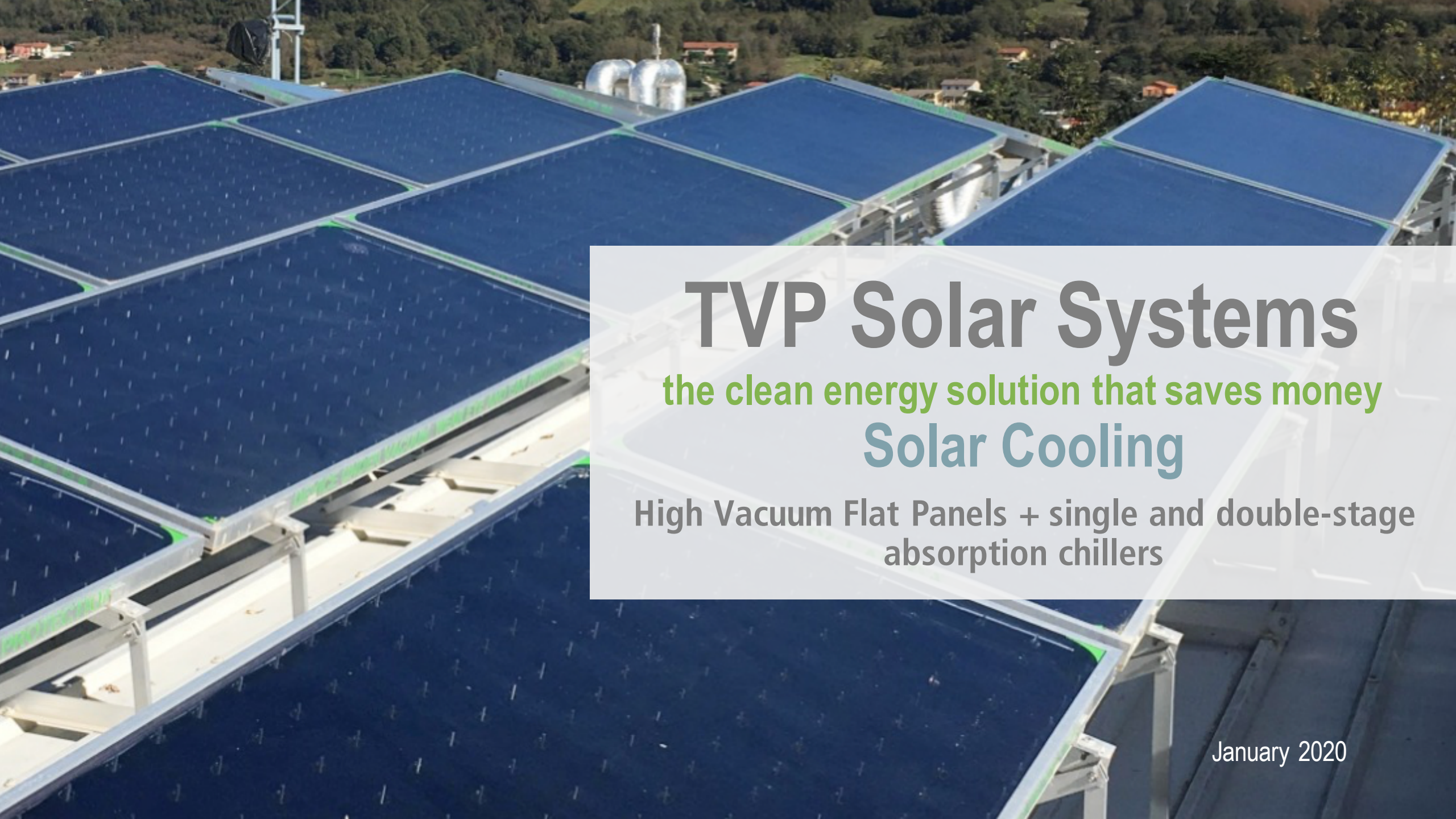
CAPEX	1,501,500 €
OPEX	9,300 €/y
Cost of Energy	25-40€/MWh

Possible optimizations

- significant economies for large scale
- include subsidies

Economic assumptions

- OPEX includes O&M, electricity, spares
- solar plant lifetime: 25 y



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Solar Cooling

High Vacuum Flat Panels + single and double-stage absorption chillers

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Solar Cooling Systems

the clean energy solution that saves money

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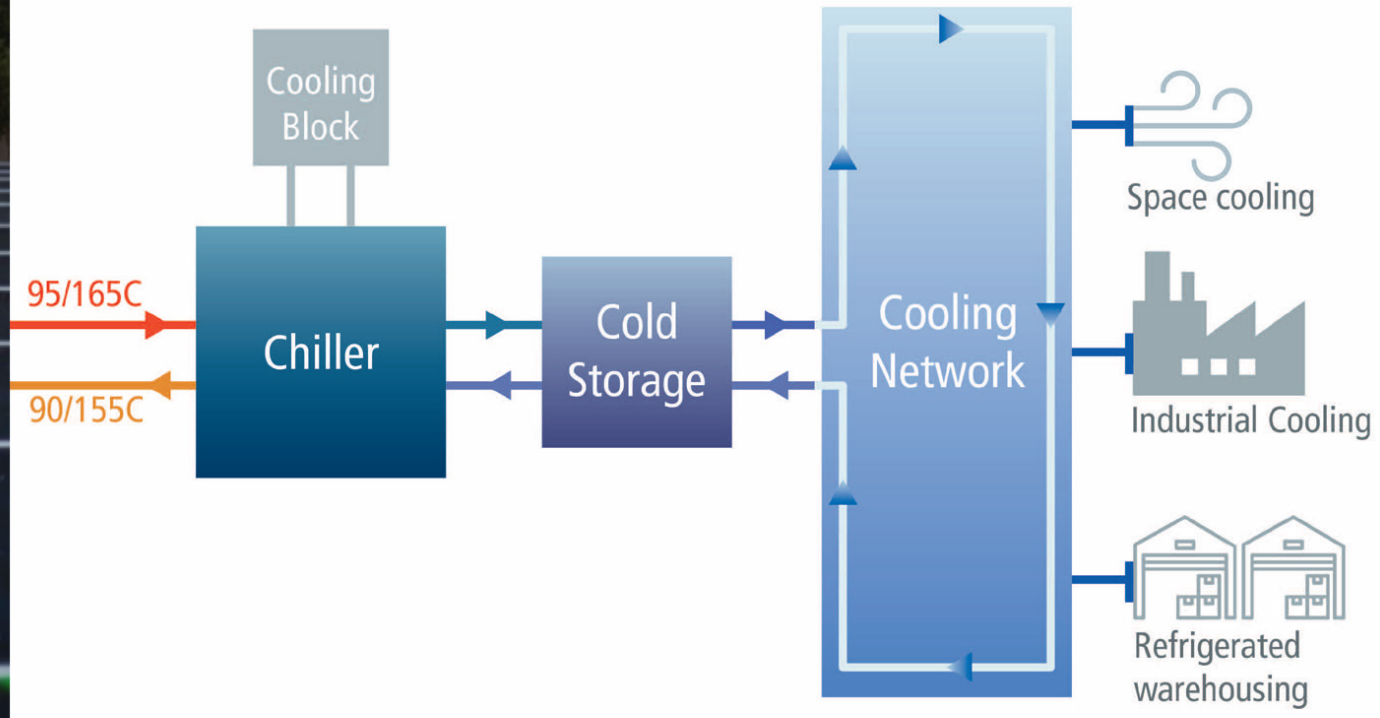
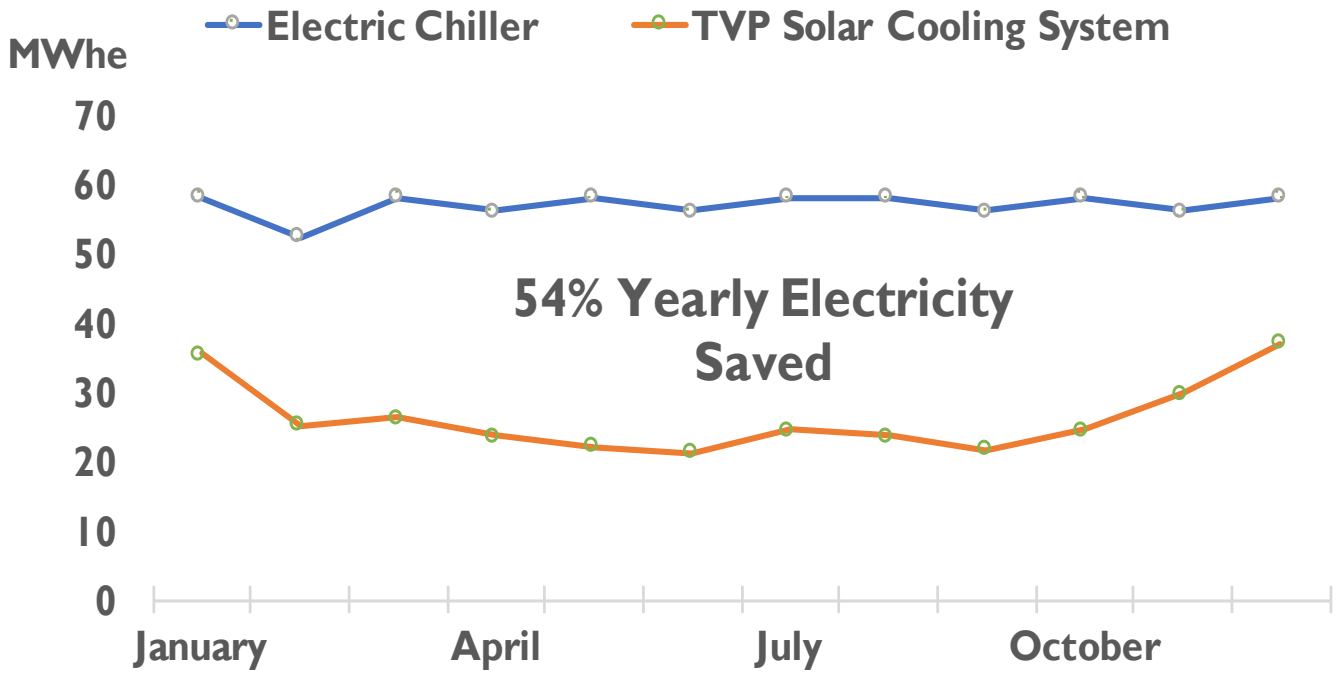
TVP Solar Cooling System - Designed for Datacenters; Warehouses; Commercial; Industries; Hospitals



Solar Cooling Systems
measurable results - savings



System description

Location	Gulf Countries	
Solar field operating T		165 °C
Solar field size	1000	m^2
Solar Cooling Power		200 TR
Electricity saved	367	MWh_e/year
CO_2 saved	30	ton/year

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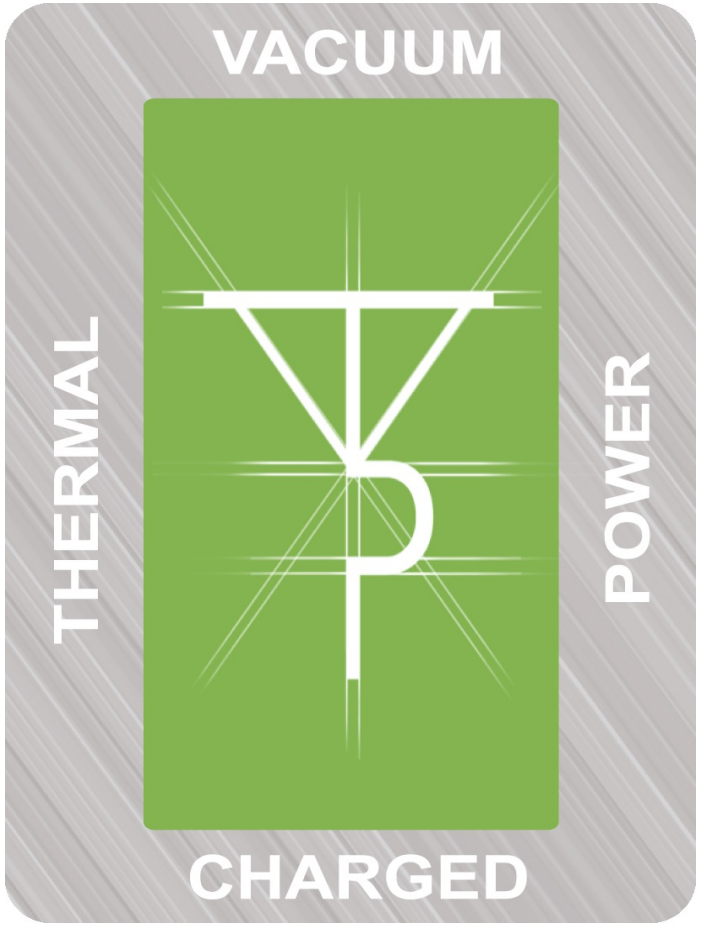

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inter solar award 2012 WINNER

SAINT-GOBAIN NOVAM 2009 ENERGY AWARD WINNER

WIPO 2012 AWARD INNOVATIVE ENTERPRISE