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# DIMA Sapienza University of Rome & Stellenbosch University co-operation with H2020 MinwaterCSP project as a reference

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## EU H2020 MINWATERCSP Project 2016-2018

12 Partners from 6 countries (Belgium, Germany, Italy, Morocco, South Africa, Spain) & 6.5 M€ funding

ECILIMP termosolar	ENEXIO	Fraunhofer
IRESEN Institut de Recharche en Energie Bolaire et en Energies Nouvelles	Kelvion Kelvion Holding GmbH	Kelvion Kelvion Thermal Solutions (Pty) Ltd
<b>Notus</b> Fan Engineering	SAPIENZA Università di Roma	
STEINBEIS- EUROPA- ZENTRUM	UNIVERSITEIT·STELLENBOSCH-UNIVERSITY jou kennisvennoot · your knowledge partner	WATERLEAU protecting the 4 elements

Minimized water consumption in CSP plants

**MinWaterCSP** 

MinWater(





This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 654443

### Kaxu Solar One

100 MW parabolic trough plant, located near Pofadder, South Africa



#### WATER-ENERGY Nexus

The use of dry-cooling ensures sustainable water usage in high-solar, dry areas



AinWaterCSP



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# URome research visits to South Africa



 1 Research associate visit (First ever 3D printed axial flow fan at SUN)



• Professor visit (2014) (during SACAM 2014 Conference)

### SUN research visits to URome 2015-2019

 1 PhD & 2 MSc students to develop thesis projects (B-Fan, M-Fan, tip blade design for ACC)



- 1 patent pending on "Design of a tip appendage for the control of tip leakage vortices in axial flow fans for the purpose of improving on fan performance"
- 2 Professor visits (2013, 2018) (giving lectures on Fluid Machinery topics)

## URome-SUN other (academic) achievements

- Prof Johan van der Spuy awarded of a Sapienza Visiting Professorship (fall 2019)
- Prof Alessandro Corsini (me) awarded of a 3-year Extraordinary Professor term (2018)
- Mutual co-supervision of MSc and PhD theses
- Development of an international research community on Industrial Fans & Blowers (in collaboration with Dr Giovanni Delibra)

Since 2014 leadership role ASME Technical Committees Co-organizers of International Conferences

# Future projects

#### MinWater CSP outcomes

- 24-ft fan installation R&D
- Fan development (aero & acoustics)
- AI and data-driven based condition monitoring (4<sup>th</sup> Industrial revolution)
- MinWaterCSP Plus proposal in progress (exploitation on real-scale CSP power plants)

DIMA-Sapienza and SUN to sign a bilateral ERASMUS+ agreement to boost student&staff mobility (under finalization with academic offices)







MinWaterCSP

# THE PROJECT TITLE

PROJECT NAME MINWATERCSP START DATE 01.01.2016

PROJECT DURATION

H2020 CALL TOPIC LCE-02-2015 DEVELOPING THE NEXT GENERATION OF TEC OF RENEWABLE ELECTRICITY AND HEATING / COOLING IS PARTNERS FROM 6 COUNTRIES WWW.MINWATERCSP.EU Kelvion ( APIENZA INIVERSITÀ DEROMA ENEXIO WAT!