#	COUNTRY:	ES	FR	IT	DE	FR	PT	CH	ES	CY	DE	PT	TR	ES
#	BENEFICIARY:	CIEMAT	CNRS	ENEA	DLR	CEA	UEVORA	ETH	IMDEA	CYI	Fraunhofer	LNEG	METU	UAL
#	SERVICE NAME / TOPIC	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes/No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No	Yes / No
1. SOLAR RESOURCE (DNI) AND METEOROLOGICAL PARAMETERS ASSESSMENT														
1	Solar Radiation Measurement and Weather Station	No	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No	Yes
2	Advising on Solar Radiation Measurement & Data Processing	No	No	No	No	No	Yes	No	No	No	No	No	No	Yes
3	DNI Measurement and Analysis	No	No	No	No	No	Yes	No	No	No	No	Yes	No	
2. SERVICES ON REFLECTORS AND CONCENTRATORS														
	2.1. Experimental Services on Reflectors													
4	Characterization of Optical Properties of Solar Reflectors	No		Yes	No	Yes	No	No	Yes	No	Yes	Yes	No	No
5	Durability of Solar Reflectors under Accelerated Aging	No		No	No	Yes	No	No	No	No	Yes	Yes	No	No
6	Outdoor exposure of Solar Reflectors	No	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	No	No
7	Optical Properties of Mirrors. Reflectance measurement. Facets characterization	No	No	Yes	No	Yes	Yes	No	No	No	Yes	No	No	No
8	Corrosion and material protection studies under artificial aging tests	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
9	Corrosion and material protection studies under outdoor exposure	No	No	No	No	No	No	No	Yes	No	Yes	Yes	No	No
10	Measurements on material properties	No	Yes	Yes	No	Yes	No	Yes	Yes	No	No	Yes	No	No
11	Heliostat control algorithms	No	Yes	No	No	No	No	No	Yes	Yes	Yes	No	No	Yes
	2.2. Available Services on Concentrator's Experimental Characterization													
12	Photogrammetry Measurement of Concentrator's shape	No	No	Yes	No	No	No	No	No	Yes	Yes	No	No	No
13	Geometrical assessment of Solar Concentrators (Single Facets, Point and Line Focus Collectors)	No	No	Yes	No	Yes	No	No	No	No	Yes	No	No	No
14	Deflectometry Measurement of Concentrator's shape	No	No	Yes	No	No	No	No	No	No	Yes	No	No	No
15	Optical and thermal characterization of solar concentrators	No	Yes	Yes	No	Yes	Yes	No	Yes	No	No	No	No	No
16	Heliostat(s) Performance Qualification	No	No	No	No	Yes	No	No	Yes	No	Yes	No	No	No
17	Parabolic Trough Collector's Characterization	No	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No	No
3. EXPERIMENTAL SERVICES ON ABSORBERS AND RECEIVERS														
	3.1. Experimental Services on Absorbers													
18	Accelerated Aging of absorbers & absorbing coatings	No	Yes	No	Yes	Yes	No	No	Yes	No	Yes	Yes	No	No
19	Optical Properties/Characterization of Absorbers & Receivers and their coating	No	Yes	Yes	No	Yes	No	No	Yes	No	Yes	Yes	No	No
20	Surface Properties of Absorbers & Receivers and their coating	No	Yes	No	No	Yes	No	No	No	No	Yes	Yes	No	No
	3.2. Experimental Services on Linear Focus Receivers													
21	Outdoor optical and thermal performance of PTC linear receivers	No	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No
22	Outdoor optical and thermal performance of Linear Fresnel receivers	No	No	No	No	No	Yes	No	No	Yes	No	No	No	No
23	Indoor qualification of linear receivers for PTC	No	No	No	Yes	No	No	No	No	No	No	No	No	No
24	Indoor qualification of linear receivers for LFC	No	No	No	No	No	No	No	No	No	Yes	No	No	No
25	Testing of components for parabolic troughs solar fields with direct steam generation under real operating conditions	No	No	No	No	No	No	No	No	No	No	No	No	No
26	Testing of components for parabolic troughs solar fields with oil under real operating conditions	No	Yes	No	No	No	No	No	No	No	No	No	No	No
27	Linear Fresnel control algorithms	No	No	No	No	No	No	No	No	Yes	No	No	No	No
	3.3. Experimental Services on Anti-Reflective Materials													
28	Surface Properties of Anti-Reflective coatings for solar receivers	No	No	No	No	Yes	No	No	No	No	No	No	No	No
29	Optical properties of solar glass envelopes with and without anti-reflective coatings	No	No	Yes	No	Yes	No	No	Yes	No	No	Yes	No	No
30	Durability tests of Anti-Reflective Coatings on glass envelopes	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No
31	Static Contact Angle measurements on the surface of Anti-Reflective Coatings	No	No	No	No	Yes	No	No	No	No	No	No	No	No
	3.4. Experimental Services on Point Focus Receivers													
32	Thermal and Thermodynamic characterization of prototype Receivers for Central Receiver on Tower Technologies under Real Operating Conditions	No	Yes	No	No	No	No	No	Yes	Yes	Yes	No	No	No
33	Lab-scale test bed used for the evaluation of open volumetric receivers	No	No	No	No	No	No	Yes	Yes	No	No	No	No	No
34	Characterization of thermal performance of prototype Receivers for solar dish technology coupled with MGT engine	No	No	Yes	No	No	No	No	No	No	No	No	No	No
4. SERVICES ON HEAT TRANSFER FLUIDS														
35	Qualification HTF based on particles	No	Yes	No	No	No	No	No	Yes	No	No	No	No	No
36	Characterization of HTF thermal properties	No	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No
37	Characterization of HTF/HSM chemical stability	No	Yes	Yes	No	No	No	No	No	No	Yes	Yes	No	No
38	Qualification HSM/HTF	No	Yes	Yes	No	No	Yes	No	No	No	Yes	No	No	No
5. SERVICES ON AUXILIARY EQUIPMENT														
39	Testing of Rotating Connections for PT receivers (Flexible hoses, ball-joints, etc.)	No	Yes	No	No	No	No	No	No	No	No	No	No	No
40	Flexible or ball-joints connections testing for molten salt loop	No	No	Yes	No	No	No	No	No	No	No	No	No	No
41	Testing in molten salt loop of auxiliary components (valves, heat tracing, instrumentation)	No	No	No	No	No	Yes	No	No	Yes	No	No	No	No
42	Sensor development and testing	No	Yes	No	No	No	No	No	No	Yes	Yes	No	No	No
43	Heat Exchangers Characterization	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No
44	Molten salt pool to steam heat exchangers		No	No	No	No	No	No	No	Yes	No	No	No	No
6. SERVICES ON THERMAL ENERGY STORAGE (MEDIA & SYSTEMS)														
45	Study on molten salts in Parabolic Trough Collectors and pipe section	No	No	Yes	No	No	No	No	No	No	No	No	No	No
46	Characterization of Materials and Components for TES	No	No	Yes	No	No	Yes	No	Yes	No	Yes	No	No	No
47	Feasibility of Materials for Sensible and Latent Thermal Storage Systems	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No	No	No
48	Qualification of Heat Storage using Packed beds under Real Operating Conditions	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No
49	Thermal & thermochemical properties evaluation for thermal storage materials	No	Yes	Yes	No	No	No	Yes	Yes	No	No	No	No	No
50	Development and characterization of Materials and Components for TES	No	Yes	Yes	No	No	Yes	No	Yes	No	Yes	No	No	No
51	Advanced solid concepts for thermal energy storage	No	Yes	No	No	No	Yes	No	Yes	No	No	No	No	Yes
52	Characterization of Materials and Components for TES systems with molten salts	Yes	TBD	Yes	No	No	Yes	No	No	No	Yes	Yes	No	No
53	Qualification of Heat Storage using concrete under experimental conditions	No	Yes	No	No	No	Yes	No	No	No	No	No	No	No
54	Qualification of Heat Storage using PCM under experimental conditions	No	Yes	No	No	Yes	No	No	No	No	Yes	No	No	No
55	Simulation and modelling of thermal storage systems. Integration in STE plants or industrial heat processes	No	No	Yes	No	No	Yes	No	Yes	No	Yes	Yes	No	No
56	Atmosferic air packed bed test bench for simulation models validation	No	Yes	No	No	No	No	No	No	No	No	No	No	No
57	Testing TES prototypes using oil as HTF	Yes	Yes	No	No	Yes	No	No	No	No	No	No	No	No
58	Two-tank molten salt storage system for simulation models validation	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
7. SERVICES ON ENGINES AND POWER BLOCS														
	7.1. Solarized Stirling Engines													
59	Testing of Solarized Stirling Engines in Real Conditions	No	Yes	No	No	No	No	No	No	No	No	No	No	No
60	Testing of Solarized gas turbine in Real Conditions	No	Yes	No	No	No	No	No	No	No	No	No	No	No
61	Testing of small steam turbines powered by molten salt steam generator	No	Yes	No	No	No	No	No	No	Yes	No	No	No	No
	7.2. Other Services on Engines and Power Blocks for CSP													
62	Optimization of exhaust gas / molten salt heat exchangers by means of numerical simulation and experimental test	No	No	No	No	No	No	No	Yes	No	No	No	No	No
8. SERVICES ON CALIBRATION OF KEY SENSORS & MEASUREMENTS FOR STE														
63	Online and offline diagnostics	No	Yes	No	No	No	No	No	No	No	No	No	No	No
64	Calibration of Concentrated solar irradiance sensors	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No
65	High flux sensors qualification	No	Yes	No	TBD	No	No	No	No	No	No	No	No	No
66	Qualification of high radiative flux processes	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No
67	Calibration of Infrared sensors for temperature measurement	No	No	No	TBD	No	No	No	No	No	No	No	No	No
68	Non-Contact Temperature Measurement at Solar Furnaces	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No
69	High temperature optical properties measurement	No	Yes	No	No	No	No	No	No	No	No	No	No	No

70	Calibration of synthetic oil mass flow meters	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No
71	Calibration of solar Irradiation, Temperature and pressure measurement sensors	No	No	No	No	No	No	No	No	No	No	No	No	No
72	Calibration of RSP Solar Irradiation Sensors	No	No	No	No	No	No	No	No	No	No	No	No	No
9. SERVICES ON SOLAR CHEMISTRY														
	9.1. Water Treatment, Disinfection and Desalination													
73	Solar photocatalytic treatment of urban and industrial wastewaters	Yes	No	No	No	No	No	No	No	No	No	Yes	No	Yes
74	Solar Photocatalytic Water Disinfection	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes
75	Solar Reactors Development for Water Treatment	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes
76	Solar Thermal Desalination by Multi-Effect Distillation	Yes	No	No	No	No	No	No	No	Yes	No	No	No	No
77	Efficiency improvement of low temperature distillation processes by absorption heat pumps	Yes	No	No	No	No	No	No	No	No	No	No	No	No
78	Efficiency improvement of MED processes by absorption heat pumps	Yes	No	No	No	No	No	No	No	No	No	No	No	No
79	Solar Thermal Desalination by Membrane Distillation	Yes	No	No	No	No	No	No	No	No	Yes	No	No	Yes
80	Innovative membrane desalination technologies (MD, FO)	Yes	No	No	No	No	No	No	No	No	Yes	No	No	Yes
81	Characterisation and Testing of Membranes for Water treatment	No	No	No	No	No	No	No	No	No	Yes	No	No	No
82	Low-temperature solar collectors for thermal water treatment	Yes	No	No	No	No	No	No	No	No	No	No	No	No
	9.2. High Temperature Solar Chemistry													
83	High Temperature Thermochemical Research Units	No	Yes	No	Yes	No	No	Yes	Yes	No	No	No	No	No
84	Thermal and Thermodynamic characterization of prototype Reactors for Central Receiver on Tower Technologies under real operating conditions	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No
85	Solar Fuels and Thermochemistry	No	Yes	No	Yes	No	No	Yes	Yes	No	No	Yes	No	No
86	Qualification of Solar Driven Processes under realistic conditions	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	No	No
	9.3. Solar Hydrogen													
87	Solar Hydrogen Production Process Qualification	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No
88	Solar Thermochemical Hydrogen/Syngas	No	Yes	No	Yes	No	No	Yes	Yes	No	No	Yes	No	No
89	Water splitting thermochemical cycles	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No
90	Solar Hydrogen production and wastewater treatment	Yes	Yes	No	No	No	No	No	No	No	No	Yes	No	No
10. SERVICES ON MATERIALS TESTING AND QUALIFICATION														
91	Surface materials treatment	Yes	Yes	No	Yes	No	No	No	Yes	No	No	No	No	No
92	Metallography. Micro-hardness analysis. Thermogravimetric analysis	Yes	Yes	No	No	No	No	No	Yes	No	No	No	No	No
93	Advanced materials analysis and characterization techniques	No	Yes	Yes	No	No	No	Yes	Yes	No	No	Yes	No	No
94	Material synthesis	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	No	No	No
95	Analytical Services (Other Materials)	No	No	No	No	No	No	No	Yes	No	No	Yes	No	Yes
96	Gas analysis	No	Yes	Yes	No	No	No	Yes	Yes	No	No	Yes	No	Yes
97	Organic Coatings Qualification	No	No	No	No	No	No	No	No	No	No	Yes	No	No
98	Surface Treatment and Metallic Coatings	Yes	Yes	No	No	No	No	No	No	No	No	Yes	No	No
99	Characterization of Polymeric Materials (elastomers and other polymers)	No	No	No	Yes	No	No	No	No	No	No	Yes	No	No
100	Thermal analysis	No	Yes	Yes	Yes	No	No	No	Yes	No	No	No	No	No
101	3D Optical surface metrology	No	No	Yes	No	No	No	No	No	No	Yes	No	No	No
11. SERVICES USING EXTREME TEMPERATURE CONDITIONS IN SOLAR CONCENTRATORS														
102	Testing of high temperature processes	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No
103	Testing of materials at high temperature	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No
104	Synthesis of materials at high temperature	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	No	No	No
105	Deposits of coatings at high temperature	No	Yes	No	No	No	No	No	No	No	No	No	No	No
106	Thermal treatment of materials at high temperature	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No
107	Testing of materials at high flux	Yes	Yes	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No
108	Solar pumped LASER testing	No	Yes	No	No	No	No	No	No	No	No	No	No	No