



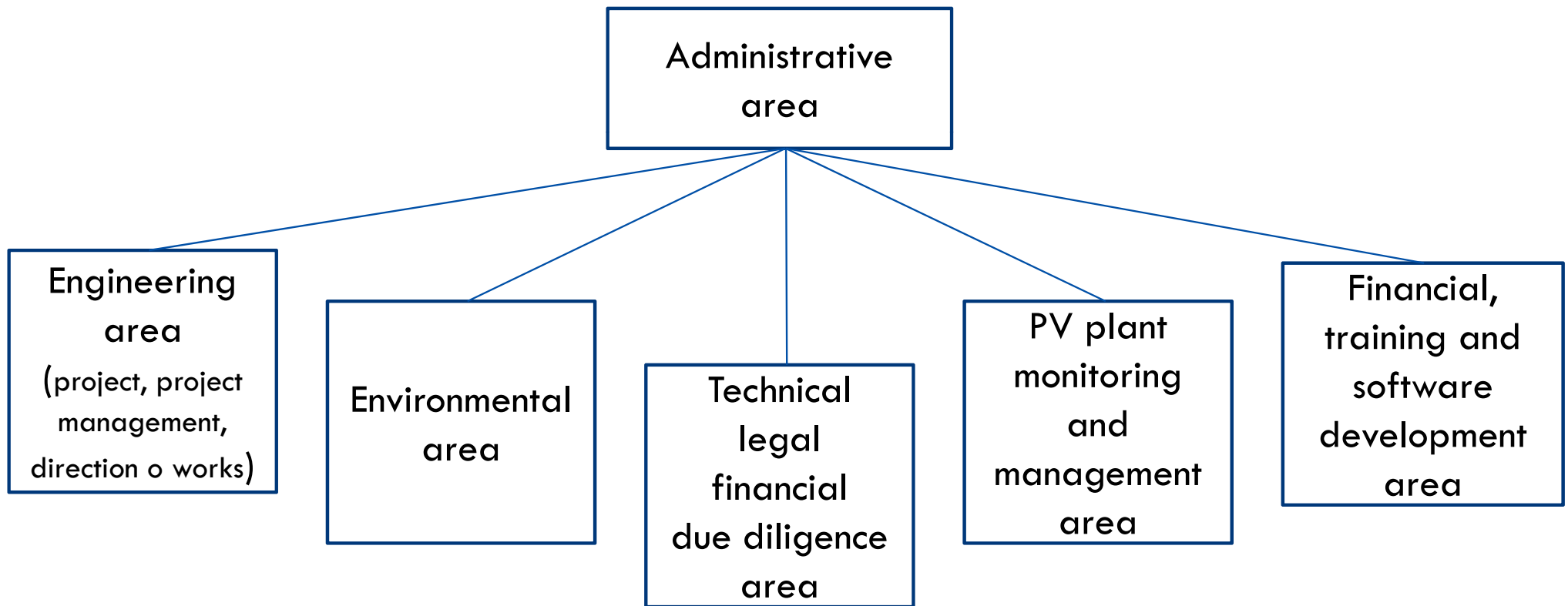
FAROGB
società di ingegneria

FAROGB's partners work together from 1998 operating in building and renewables sectors, providing high level quality services in project, works direction and project management.

The main activities of the Company are:

- Management and implementation of complex projects in public and private sector
- Design, project management and construction supervision of electrical and technological installations
- Development , licensing, design, project management and construction supervision of installations producing electricity from renewable sources, particularly photovoltaic plants (more than 200MW experience)
- Due diligence of PV systems
- Expertise and technical advice in construction
- Energy audits to improve energy efficiency and cost reduction
- Participation in European, regional, national tenders
- Management practices of connection to the national grid of plants producing electricity
- Feasibility studies and technical and financial analysis of energy efficiency projects and installations producing electricity from renewable sources
- Technical support for the development, acquisition and management of photovoltaic plants
- Training and courses on photovoltaic systems
- Technical support for Software development
- Testing and measures (PV plants PR, Insulation and impedance testing, earth measurement)
- Thermographic Analysis
- O&M Engineering Service

Organization



Sectors of activity

FAROGB
società di ingegneria

Renewable Energy



Electrical Installations



Thermomechanical Plants



Engineering Services



Energy Management



Environmental Sustainability



Safety



1. Best references engineering installations

System				
Job order	0506	0510	0522	0530
Place	Milano (MI)	Bardonecchia (TO)	Poirino (TO)	Bardonecchia (TO)
Year	2006-2009	2005-2012	2006-2008	2005-2006
Work description	Restructuring of the hotel building called "Town House Seven Star Galleria"	Realization of new housing units	Realization of a new nursery in the Municipality of Poirino. Electrical systems and coordination	Counseling for drafting public lighting plan ("piano energetico di illuminazione pubblica – PEIP")
Type of work	Global Project management, Coordination of all the works, electrical systems test	Global Project management, Electrical systems design, works supervision and coordination	Final design of electrical systems, works supervision, test counseling	Counseling
Photos				

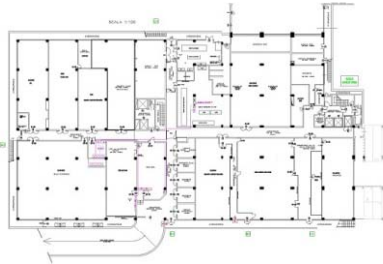
1. Best references engineering installations

System				
Job order	0534	0603	0607	0610
Place	San Mauro (TO)	Moncalieri (TO)	Roma	Torino (TO)
Year	2005-2007	2006-2008	2006-2009	2006 - 2008
Work description	Upgrade of existing electrical systems of a residential building to regulation standards	Restructuring of the sport-center. Electrical systems	Restructuring of a historical tower dated to 1400 and its conversion to hospitality use (realization of high level suites). Electrical systems	Restructuring of premises for notary office (1 500 m ²). Electrical systems, structural wiring, active systems
Type of work	Final design of electrical systems, works supervision, test counseling	Final design of electrical systems	Final design of electrical systems, works supervision, test counseling	Final design of electrical systems, works supervision, test counseling
Photos				

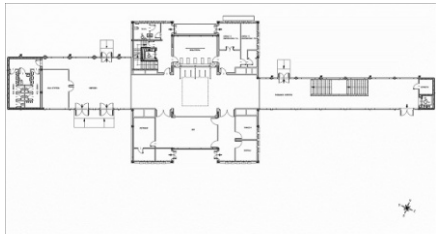
1. Best references engineering installations

System					
Job order	0612	0701	0713	0714	0733
Place	Torino (TO)	Torino (TO)	Colico (LC)	Merate (LC)	Milano (MI)
Year	2006-2007	2007-2008	2007	2007	2007-2009
Work description	District of Stadium "Stadio Comunale", c.so Galileo Ferraris 288. Realization of the new swimming pool, lotto 3: realization of the roof. Electrical systems	Realization of new housing units after the division of a old industrial building (loft)	Restructuring and conversion to public school for 500 students. Electrical systems	Realization of public school for 500 students and of unique center of the cooking school canteens. Electrical systems	Restructuring of the hotel building called "Town House 33 Milano"
Type of work	Final design of electrical systems, works supervision, test counseling	Electrical systems design	Final design of electrical systems	Final design of electrical systems	Project management, Final design of electrical systems, works supervision, test counseling
Photos					

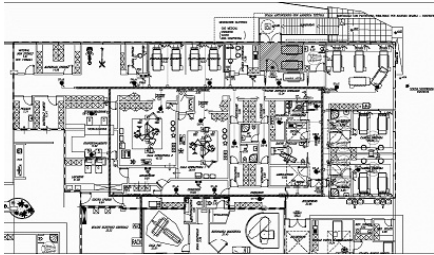
1. Best references engineering installations

System				
Job order	0819	0891	0910	0916
Place	Caprie (TO)	Rivoli (TO)	Cirié (TO)	Milano (MI)
Year	2008-2011	2009-2011	2009-2011	2010-2011
Work description	Factory automotive design. Adaptation of MV / LV operations of various changes and expansion of the existing wiring	Industrial shed aerodynamic field. Electrical adjustment. Modification and upgrading of existing electric as a result of fractionation	Public hospital. Expansion and reorganization to create new departments	Office building – CED rooms large retail group
Type of work	Design electrical systems and classification places with danger of explosion	Electrical design and site supervision	Drawing up construction plans and as-built documentation of electrical installations on behalf of the company in charge of extension work	Design and supervision of interventions to extend and modify electrical system. Replacement UPS
Photos				

1. Best references engineering installations

System				
Job order	0921	0944	0949	1032
Place	Torino (TO)	Caselle T.se (TO)	Torino (TO)	Venaria (TO)
Year	2009-2011	2011	2009-2011	2010-2011
Work description	Railway station - Buildings TEIE and shelter	Production of electricity production plant of biogas (approximately 1 MW)	Construction of new offices by commercial buildings	Construction of the new mall
Type of work	Detail design and drafting as-built documentation of electrical works on behalf of the performer	Design and site supervision MT internal network	Working plan and works supervision of electrical and special systems	Assistance in preparation of construction plans of special systems (fire detection, CCTV, burglar alarm, sound system)
Photos				

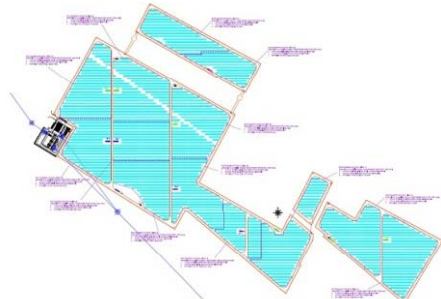
1. Best references engineering installations

System				
Job order	1111	1150	0935	0806
Place	Vignale (AL)	Bolzano (BZ)	Chiavari (GE)	Torino (TO)
Year	2011 - in progress	2011	2009	2007 - 2011
Work description	Redevelopment and adaptation. Historic building	New surgery at private clinic	Railway station. Recovery and functional adaptation	New private sports complex
Type of work	Construction planning and preparing as-built documentation of electrical and thermo-mechanical works on behalf of the performer	Advice and assistance to the executive design electrical systems	Preparing documentation and construction project as-built electrical system and fire detection works on behalf of the executing company	Final design, and site supervision electrical, thermo-mechanical and infrastructure works (street lighting)
Photos				

2. Best references in Photovoltaic plants

PV plant	P _n : 4747,2 kWp	P _n : 11896,75 kWp	P _n : 6509,265 kWp	P _n : 250,00 kWp
Job order	0805 (year 2008 – 2009)	1054 (year 2010 – 2011)	1074-1 (year 2010 – 2011)	13061 (2013 to present)
Place	Serravalle Scrivia (AL)	Ferrara (FE)	Brindisi (BR)	Eritrea 
Type	Covers canopies sheds and parking lots of industrial plant	Fixed structures on ground - HV connection	Fixed structures on ground - HV connection	Sperimental ground structures
Modules	TRINA TSM-PC05 (220-230 Wp)	Policristallini Q.Cells, Canadian Solar, Trinasolar	Q.Cells QC-C05 (235 Wp)	(250 Wp)
Inverters	Elettronica Santerno	SMA Sunny Central SC630CP, SMA Sunny Central SC760CP, SMA Sunny Central SC800CP	XANTREX GT500E SCHNEIDER, SOLARMAX 330TS-SV	Stand alone and on grid inverters
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	In progress
Activities	Working plan and electrical works supervision	Working plan and support on electrical works supervision	Working plan and support on electrical works supervision	Project Management and works supervision
Photo				

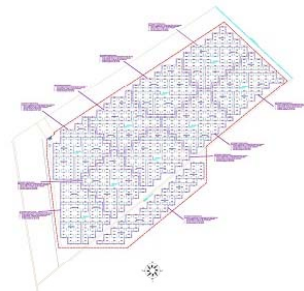
2. Best references in Photovoltaic plants

PV plant	P _n : 4997,44 kWp	P _n : 4721,095 kWp	P _n : 868 kWp	P _n : 14779,368 kWp
Job order	CN11c (year 2011)	1049 (year 2010-2011)	0873 (year 2008-2011)	1117 (year 2011)
Place	Fossano (CN)	Massa Lombarda (RA)	Carrù (CN)	Porotto (FE)
Type	One axis trackers	Fixed structures on ground	One axis trackers	Fixed structures on ground
Modules	TRINA TSM-PC05 (225 – 235 Wp)	Canadian C S6P (225 - 230 - 235 - 240 Wp)	RENESOLA JC230S-24/Bb (230 W) , JC240S-24/Bb (240 W)	Sunpower E19/318
Inverters	SMA SMC11000TL-10	SMA SC1000MV-11	SMA Sunny Tripower 12000TL-10	SMA SC1250MV-11
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Authorized
Activities	Authorization and connection procedure, project management, final design, working plan, works supervision	Working plan and electrical works supervision	Authorization and connection procedure, final design, working plan, works supervision	Final design electrical systems for authorization process
Photo				

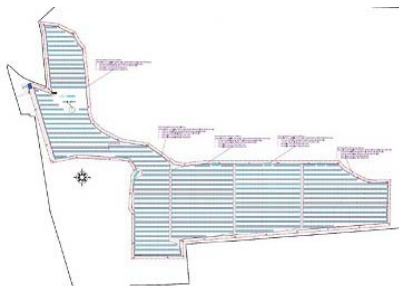
2. Best references in Photovoltaic plants

PV plant	P _n : 7084 kWp	P _n : 1416,8 kWp	P _n : 1262,24 kWp	P _n : 1738,80 kWp
Job order	CN10a (year 2009 – 2011)	AL03 (year 2009 – 2011)	AL04a (year 2009 – 2011)	AL12 (year 2009 – 2011)
Place	Ceva (CN)	Quattordio (AL)	Casale Monferrato (AL)	Predosa (AL)
Type	One axis trackers	One axis trackers	One axis trackers	One axis trackers
Modules	TRINA TSM-PC05 (230 Wp)	TRINA TSM-PC05 (230 Wp)	TRINA TSM-PC05 (225 Wp – 235 Wp)	TRINA TSM-PC05 (225 – 230 - 235 Wp)
Inverters	SMA Sunny Tripower 12000TL-10	SMA Sunny Mini Central 11000TL-10	SMA Sunny Mini Central 11000TL-10	SMA Sunny Mini Central 11000TL-10
Project stage	Authorized	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation
Activities	Authorization and connection procedure, final design, working plan	Authorization and connection procedure, Project Management, final design, working plan, works supervision	Authorization and connection procedure, Project Management, final design, working plan, works supervision	Authorization and connection procedure, final design, working plan, works supervision
Photo				

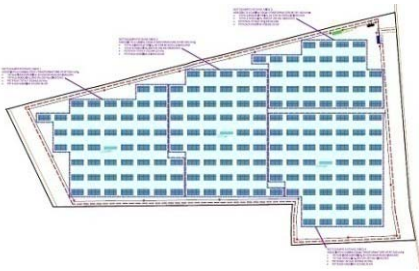
2. Best references in Photovoltaic plants

PV plant	P _n : 6195,28 kWp	P _n : 6993,84 kWp	P _n : 4095,84 kWp	P _n : 6568,8 kWp
Job order	AL13 (year 2009 – 2011)	AL14 (year 2009 – 2011)	AL18 (year 2009 – 2011)	AL21 (year 2009 – 2011)
Place	Tortona (AL)	Tortona (AL)	Pozzolo Formigaro (AL)	Tortona (AL)
Type	One axis trackers	One axis trackers	One axis trackers	One axis trackers
Modules	CSI CS6P-225P (225 Wp), CSI CS6P-230P (230 Wp), TRINA TSM-PC05 (230 Wp), CSI CS6P-235P (235 Wp)	TRINA TSM-PC05 (225 - 230 - 235 Wp)	TRINA TSM-PC05 (230 Wp)	TRINA TSM-PC05 (230 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10	SMA Sunny Mini Central 11000TL-10	SMA Sunny Mini Central 11000TL-10	SMA Sunny Mini Central 11000TL-10
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation
Activities	Authorization and connection procedure, final design, working plan, works supervision	Authorization and connection procedure, final design, working plan, works supervision	Authorization and connection procedure, final design, working plan, works supervision	Authorization and connection procedure, final design, working plan, works supervision
Photo				

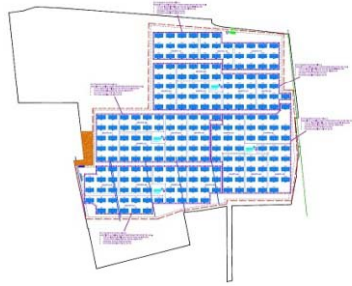
2. Best references in Photovoltaic plants

PV plant	P _n : 4068,24 kWp	P _n : 4663,15 kWp	P _n : 1738,8 kWp	P _n : 6581,68 kWp
Job order	AL23 (year 2009 – 2011)	AL24a (year 2009 – 2011)	AL25 (year 2009 – 2011)	AL33 (year 2009 – 2011)
Place	Sale (AL)	Pontestura (AL)	Sale (AL)	Bosco Marengo (AL)
Type	Farm greenhouse cover	Fixed structures on ground	One axis trackers	One axis trackers
Modules	TRINA TSM-PC05 (230 Wp)	TRINA TSM-PC05 (230 Wp)	TRINA TSM-PC05 (230 Wp)	TRINA TSM-PC05 (230 Wp)
Inverters	SMA Sunny Tripower 12000TL-10	SMA Sunny Tripower 12000TL-10	SMA Sunny Mini Central 11000TL-10	SMA Sunny Mini Central 11000TL-10
Project stage	Authorized	Authorized	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation
Activities	Authorization and connection procedure, final design	Authorization and connection procedure, final design, working plan	Authorization and connection procedure, final design, working plan, works supervision	Authorization and connection procedure, Project management, final design, working plan, works supervision
Photo				

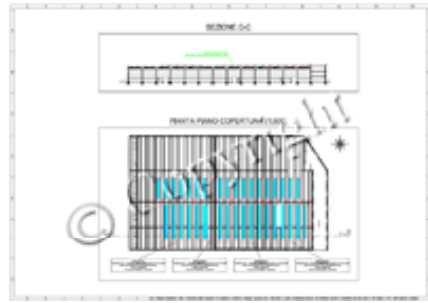
2. Best references in Photovoltaic plants

PV plant	P _n : 2357,04 kWp	P _n : 4997,44 kWp	P _n : 1184,96 kWp	P _n : 1128 kWp
Job order	AL44 (year 2009 – 2011)	AL47a (year 2009 – 2011)	AL47b (year 2009 – 2011)	TO22 (year 2009 – 2011)
Place	Alessandria (AL)	Alessandria (AL)	Alessandria (AL)	Lombardore (TO)
Type	One axis trackers	One axis trackers	One axis trackers	One axis trackers
Modules	TRINA TSM-PC05 (230 Wp)	TRINA TSM-PC05 (225 - 230 - 235 Wp)	TRINA TSM-PC05 (230 Wp)	TRINA TSM-PC05 (230 Wp)
Inverters	SMA Sunny Tripower 12000TL-10	SMA Sunny Mini Central 11000TL-10	SMA Sunny Mini Central 11000TL-10	SMA Sunny Tripower 12000TL-10
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Authorized
Activities	Authorization and connection procedure, final design, work supervision	Authorization and connection procedure, final design, working plan, works supervision	Authorization and connection procedure, final design, working plan, works supervision	Authorization and connection procedure, final design, working plan
Photo				

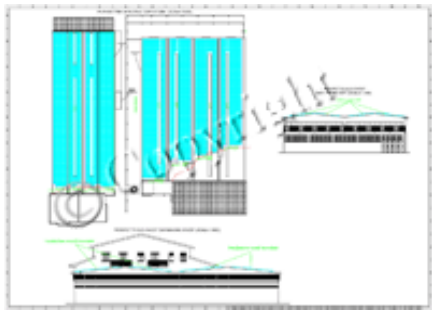
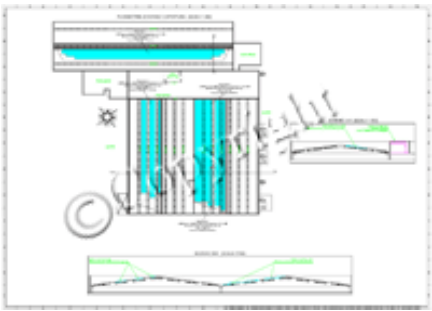
2. Best references in Photovoltaic plants

PV plant	P _n : 2796 kWp	P _n : 102,9 kWp + 19,6 kWp	P _n : 150,15 kWp + 19,6 kWp	P _n : 920 kWp
Job order	TO25 (year 2009 – 2011)	0806 (year 2008 – 2009)	0829 (year 2008 – 2009)	0836 (year 2008 – 2009)
Place	Leini (TO)	Nichelino (TO)	Caselle Torinese (TO)	Stornara (FG)
Type	One axis trackers	Covers industrial warehouse	Hedges of farm sheds	Fixed structures on ground
Modules	TRINA TSM-PC05 (230 Wp)	Azursolar M175 (175 Wp)	Azursolar M175 (175 Wp)	Trina TSM-PC05 (230 Wp)
Inverters	SMA Sunny Tripower 12000TL-10	Platinum 4600S	Platinum 4600S	SMA Sunny Central SC1002MV
Project stage	Authorized	Connected – GSE tariff granted	Connected – GSE tariff granted	Connected – GSE tariff granted In operation
Activities	Authorization and connection procedure, final design	Working plan and electrical works supervision	Working plan and electrical works supervision	Working plan and electrical works supervision
Photo				

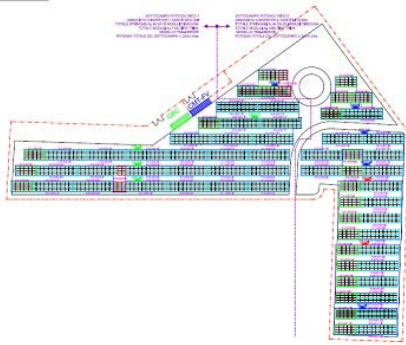
2. Best references in Photovoltaic plants

PV plant	P _n : 994,98 kWp	P _n : 754,4 kWp	P _n : 64,8 kWp	P _n : 198,72 kWp
Job order	0847 (year 2008 – 2009)	0852 (year 2008 – 2009)	0853c (year 2008 – 2009)	0862b (year 2008 – 2009)
Place	Stornarella (FG)	Cutrofiano (LE)	Cavaglià (BI)	Santena (TO)
Type	Fixed structures on ground	Fixed structures on ground	Two axis trackers	Covers industrial warehouse
Modules	Pramac Luce MCPH 115 (115 Wp)	Trina TSM-PC05 (230 Wp)	Sharp NU-SOE3E (180 Wp)	Solon SEM 220 (230 Wp)
Inverters	SMA Sunny Central SC1000MV-IT	SMA Sunny Central SC700MV	SMA Sunny Boy 7000TL-IT	Elettronica Santerno
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation
Activities	Working plan and electrical works supervision	Working plan and electrical works supervision	Authorization and connection procedure, final design, working plan and electrical works supervision	Working plan of electrical systems
Photo				

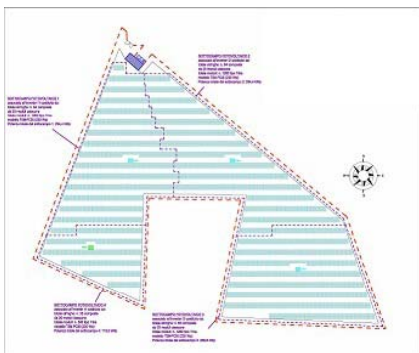
2. Best references in Photovoltaic plants

PV plant	P _n : 159 kWp	P _n : 121,44 kWp	P _n : 978,4 kWp	P _n : 239,2 kWp
Job order	0862n (year 2008 – 2009)	0862z (year 2008 – 2009)	0934 (year 2009 – 2010)	0963a (year 2009 – 2010)
Place	Bruino (TO)	Bruino (TO)	Chieri (TO)	Favara (AG)
Type	Covers industrial warehouses	Covers industrial warehouses	Covers industrial warehouses	Fixed structures on ground
Modules	Kaneka G-EA060 (60 Wp)	Solon SEM 220 (230 Wp)	Solon Blue 230/07 (230 Wp, 235 Wp)	Trina TSM-PC05 (230 Wp)
Inverters	Fronius	Elettronica Santerno	SMA Sunny Central 250, 350	Elettronica Santerno SUNWAY TG310 800V TE
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation
Activities	Working plan of electrical systems	Working plan of electrical systems	Working plan and electrical works supervision	Working plan and electrical works supervision
Photo				

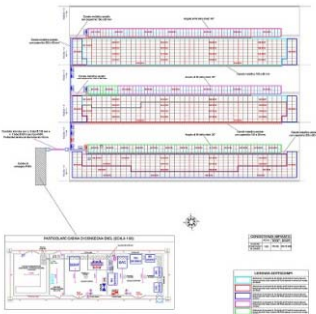
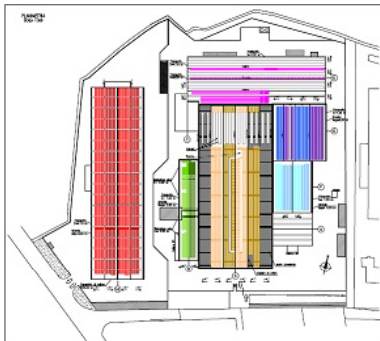
2. Best references in Photovoltaic plants

PV plant	P _n : 501,4 kWp	P _n : 103,4 kWp	P _n : 996,4 kWp	P _n : 968,07 kWp
Job order	0963b (year 2009 – 2010)	1027 (year 2010 – 2011)	1037m (year 2010 – 2011)	1037c1 (year 2010 – 2011)
Place	Partinico (PA)	Villanova Mondovì (CN)	Civitella del Tronto (TE)	Campli (TE)
Type	Fixed structures on ground	Hedges of farm sheds	Fixed structures on ground	Fixed structures on ground
Modules	Trina TSM-PC05 (230 Wp)	Sharp ND-F220A1	ET Solar ET-P660235	Tianwei TW230P60
Inverters	Elettronica Santerno SUNWAY TG310 800V TE	Danfoss TLX - Danfoss TLX 12.5k	SMA SC500CP	SMA SC500CP
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation
Activities	Working plan and electrical works supervision	Design and final electrical. Care practices	Working plan and electrical works supervision	Working plan and electrical works supervision
Photo				

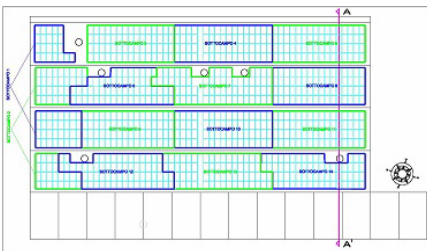
2. Best references in Photovoltaic plants

PV plant	P _n : 968,07 kWp	P _n : 973,36 kWp	P _n : 2285,28 kWp	P _n : 993,6 kWp
Job order	1037c2 (year 2010 – 2011)	1037dr (year 2010 – 2011)	1037r (year 2010 – 2011)	1042 (year 2010 – 2011)
Place	Campoli (TE)	Rocisano (TE)	Campoli (TE)	Mottola (TA)
Type	Fixed structures on ground	Fixed structures on ground	Fixed structures on ground	Fixed structures on ground
Modules	Tianwei TW230P60	Tianwei TW230P60	Tianwei TW230P60	Trina TSM-PC05
Inverters	SMA SC500CP	SMA SC500CP	Siemens Sinvert 1000 MS TL	SMA SC250 e SC100CP
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation
Activities	Working plan and electrical works supervision	Working plan and electrical works supervision	Working plan and electrical works supervision	Working plan of electrical systems
Photo				

2. Best references in Photovoltaic plants

PV plant	P _n : 365,7 kWp	P _n : 1615,52 kWp	P _n : 1357 kWp	P _n : 1500,72 kWp
Job order	1045 (year 2010 – 2011)	1046 (year 2010 – 2011)	1048 (year 2010 – 2011)	1064 (year 2010 – 2011)
Place	Bellusco (MB)	Sant'Atto (TE)	Castelnuovo (TE)	Chivasso (TO)
Type	Cover industrial warehouse	Cover industrial warehouse	Cover industrial warehouse	Shelters for industrial parks
Modules	Rich Solar RS-P230	Rich Solar RS-P230	Rich Solar RS-P230	Aide Solar XZST-185 W
Inverters	Sun Access SG650K3 - Sun Access SG630K3 - Sun Access SG100K3	Sun Access SG610K3 - Sun Access SG250K3 - Sun Access SG100K3	Sun Access SG610K3 - Sun Access SG250K3 - Sun Access SG100K3	VACON NXV0125
Project stage	In operation	In operation	In operation	Connected – GSE tariff granted In operation
Activities	Final design and working plan of electrical system	Final design and working plan of electrical system	Final design and working plan of electrical system	Advise and assist the preparation of construction projects and as-built documentation on behalf of the performer of the works
Photo				

2. Best references in Photovoltaic plants

PV plant	P _n : 440,64 kWp	P _n : 997,81 kWp	P _n : 198,26 kWp	P _n : 1600,00 kWp
Job order	1102 (year 2011 – 2012)	1113 (year 2011 – 2012)	1123 (year 2011 – 2012)	13075 (2013 to present)
Place	Balzola (AL)	Bene Vagienna (CN)	Momo (NO)	Eritrea 
Type	Covers industrial warehouses	Fixed structures on ground	Covers industrial warehouse	Sperimental ground structures
Modules	Bosh Solar c-Si M 60	LDK Solar 235P-20	Sunlink SL220-20P	(250 Wp)
Inverters	Power One 220.0-IT, Power One PVI-4.2-OUTD, Power One PVI-10.0-OUTD, Power One PVI-12.5-OUTD	Power One PVI-330.0 TL	Power One PVI-10.0-OUTD, Power One PVI-12.5-OUTD	Stand alone inverters
Project stage	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation	In progress
Activities	Final design and working plan of electrical system. Care practices	Project Management, Working plan of electrical system and care practices, work supervision	Final design and working plan of electrical system. Care practices	Project Management and works supervision of 22 PV plants
Photo				

2. Best references in Photovoltaic plants

PV plant	P _n : 944,28 kWp	P _n : 39906 kWp	P _n : 6534,57 kWp	P _n : 129,72 + 180,48 kWp
Job order	1146 (year 2011-2012)	0931 (year 2009 – 2011)	1074-2 (year 2010 – 2011)	1065c1 – 1065c (year 2010 – 2011)
Place	Villacidro (VS)	Nola (NA)	Brindisi (BR)	Aglié (TO)
Type	Hedges of farm sheds	Roofs of sheds and warehouses interport	Fixed structures on ground - HT connection	Covers industrial warehouses
Modules	Rich Solar RS-P230, Rich Solar RS-P240	Trina TSM-PC05, Pramac Luce MCPH 125 W	Q.Cells QC-C05 (235 Wp)	Ferrania Solis 235 W
Inverters	Power One PVI-330-TL-IT, Power One PVI-220-TL-IT, Power One TRIO 27.6-TL-OUTD	SMA (various models)	XANTREX GT500E SCHNEIDER, SOLARMAX 330TS-SV	Refusol 010K – Refusol 020K
Project stage	Connected – GSE tariff granted In operation	--	Connected – GSE tariff granted In operation	Connected – GSE tariff granted In operation
Activities	Final design and working plan of electrical system	Final design by definition offer	Working plan and support on electrical works supervision	Final design and working plan of electrical system. Care practices
Photo				

Project description

PV Plant	P_n: 4747,2 kWp
Job order	0805
Place	Serravalle Scrivia (AL)
Type	Sheds and shelters of roofing parking lots of industrial plant
Modules	TRINA TSM-PC05 (220-230 Wp)
Inverters	Elettronica Santerno
Project stage	Connected – GSE tariff granted. In operation
Activities	Final design, electrical works supervision (in collaboration with Ing. D. Felloni)



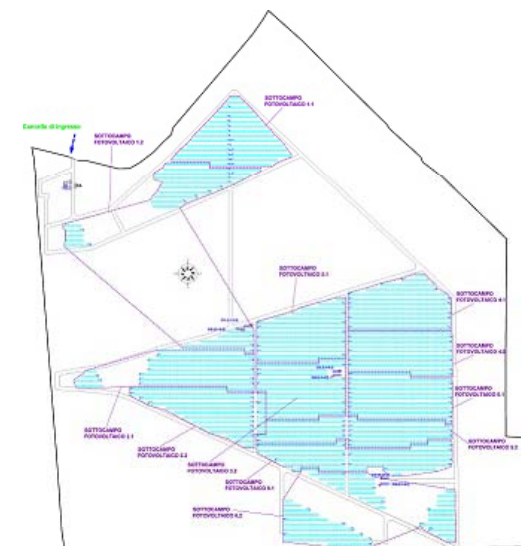
Project description

PV Plant	P_n: 11896,75 kWp
Job order	1054
Place	Ferrara - Focomorto (FE)
Type	Fixed structures on ground – HT connection
Modules	TRINA TSM-PC05 (225 Wp), CANADIAN SOLAR CS6P-230 W (230 Wp), Q CELLS QC-C05 (235 Wp)
Inverters	SMA Sunny Central SC630CP, SMA Sunny Central SC760CP, SMA Sunny Central SC800CP
Project stage	End of works GSE (L.129/10) - In operation
Activities	Working plan and support on electrical works supervision



Project description

PV Plant	P_n: 6509,265 kWp
Job order	1074-1
Place	Brindisi (BR)
Type	Fixed structures on ground – HT connection
Modules	QCELLS QC-C05 (235 Wp)
Inverters	XANTREX GT500E SCHNEIDER, SOLARMAX 330TS-SV
Project stage	End of works GSE (L.129/10) - In operation
Activities	Working plan and support on electrical works supervision (collaboration)



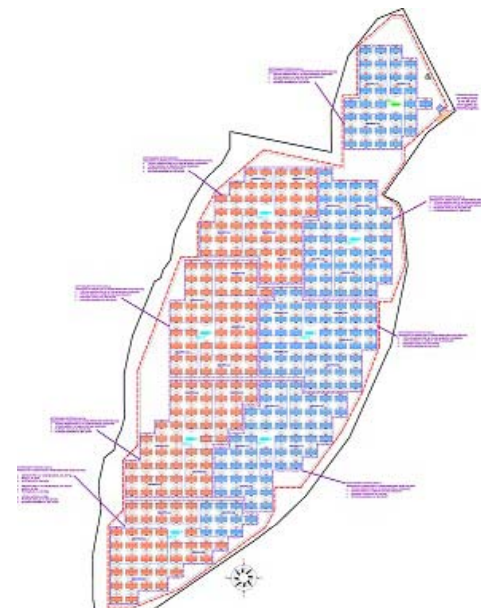
Project description

PV Plant	P_n: 6534,57 kWp
Job order	1074-2
Place	Brindisi (BR)
Type	Fixed structures on ground – HT connection
Modules	CANADIAN SOLAR CS6P 220 W (220 Wp), CANADIAN SOLAR CS6P 225 W (225 Wp), CANADIAN SOLAR CS6P 230 W (230 Wp), QCELLS QC-C05 (240 Wp)
Inverters	XANTREX GT500E SCHNEIDER, SOLARMAX 330TS-SV
Project stage	End of works GSE (L.129/10) - In operation
Activities	Working plan and support on electrical works supervision (collaboration)



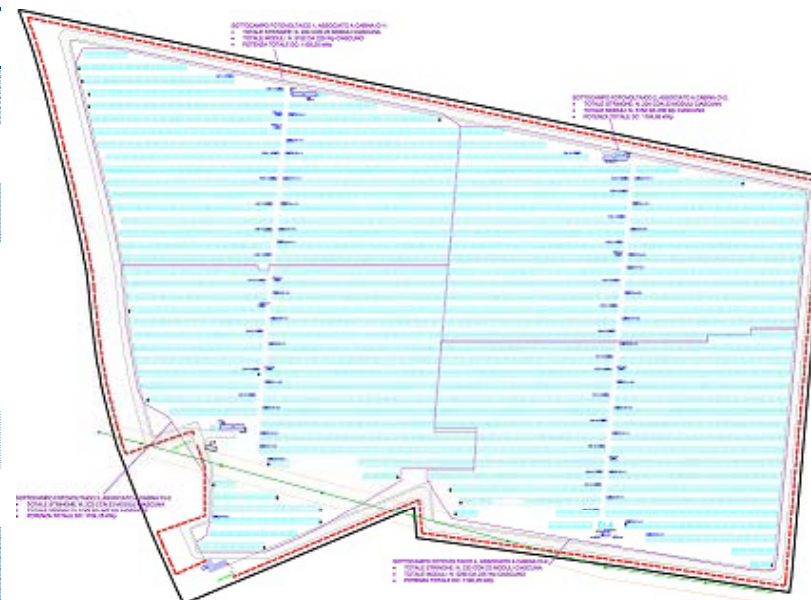
Project description

PV Plant	P_n: 4997,44 kWp
Job order	CN11c
Place	Fossano (CN)
Type	One axis trackers
Modules	TRINA TSM-PC05 (225 - 230 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L.129/10) - In operation
Activities	Authorization and connection procedures, Project Management, final design, working plan, works supervision



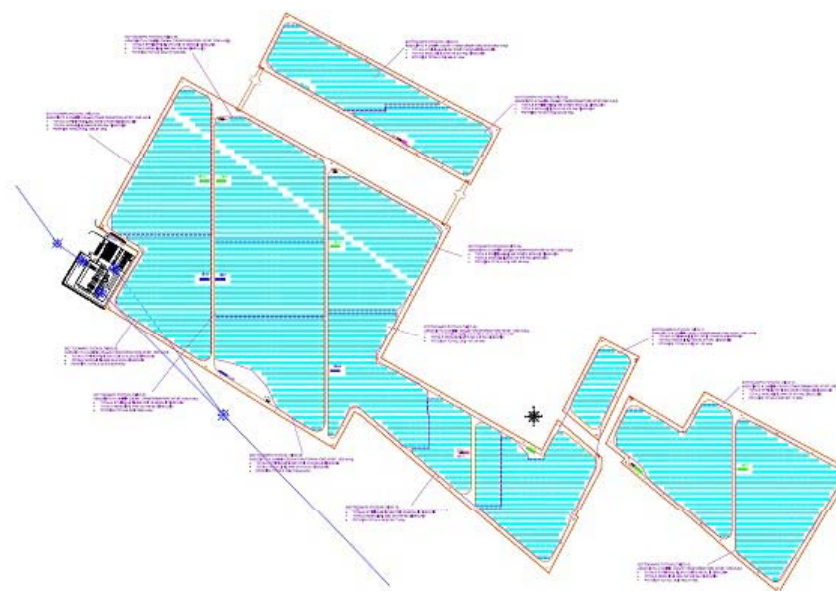
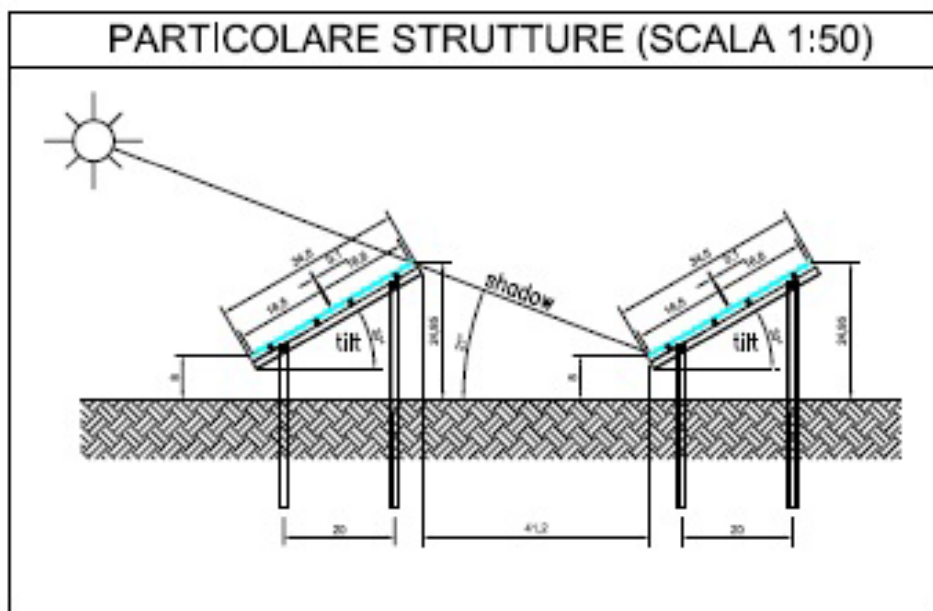
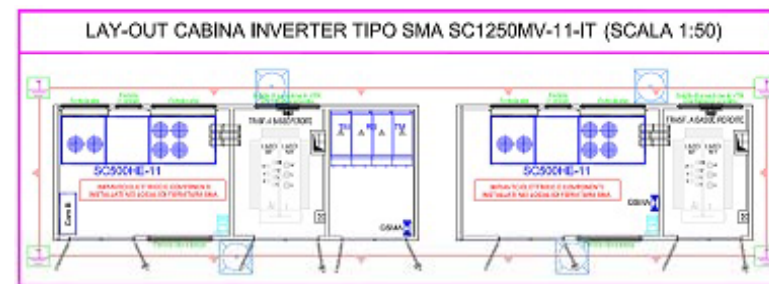
Project description

PV Plant	P_n: 4721,095 kWp
Job order	1049
Place	Massa Lombarda (RA)
Type	Fixed structures on ground
Modules	CANADIAN SOLAR CS6P-220 W (220 Wp), CANADIAN SOLAR CS6P-225 W (225 Wp), CANADIAN SOLAR CS6P-230 W (230 Wp), CANADIAN SOLAR CS6P-235 W (235 Wp), CANADIAN SOLAR CS6P-240 W (240 Wp)
Inverters	SMA SC1000MV-11
Project stage	End of works GSE (L.129/10) - In operation
Activities	Working plan and electrical works supervision (collaboration)



Project description

PV Plant	P_n: 14779,368 kWp
Job order	1117
Place	Ferrara - Aranova (FE)
Type	Fixed structures on ground
Modules	Sunpower E19/318
Inverters	SMA SC1250MV-11
Project stage	Authorized
Activities	Final design electrical systems for authorization process (collaboration)



Project description

PV Plant	P_n: 1416,8 kWp
Job order	AL03
Place	Quattordio (AL)
Type	One axis trackers
Modules	TRINA TSM-PC05 (230 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L. 129/10) – In operation
Activities	Authorization and connection procedures, Project Management, final design, working plan, works supervision



Project description

PV Plant	P_n: 1262,24 kWp
Job order	AL04a
Place	Casale Monferrato (AL)
Type	One axis trackers
Modules	TRINA TSM-PC05 (225 - 230 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L. 129/10) - In operation
Activities	Authorization and connection procedures, Project Management, final design, working plan, works supervision



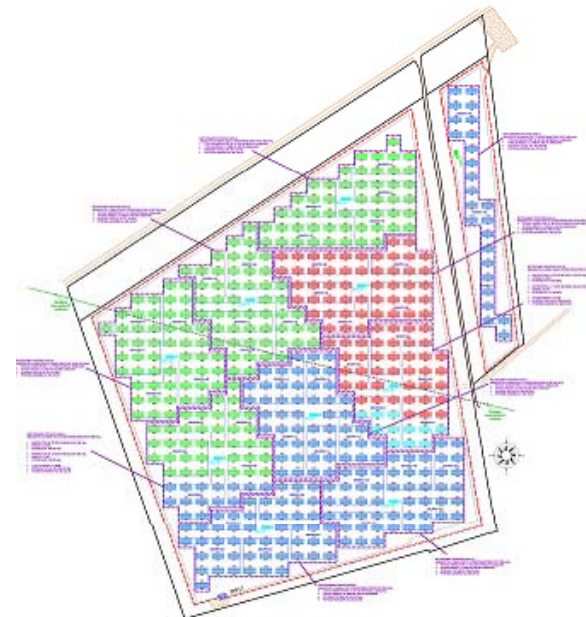
Project description

PV Plant	P_n: 1738,8 kWp
Job order	AL12
Place	Predosa (AL)
Type	One axis trackers
Modules	CSI CS6P-225P (225 Wp), TRINA TSM-PC05 (230 Wp), CSI CS6P-235P (235 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L. 129/10) - In operation
Activities	Authorization and connection procedures, final design, working plan, works supervision



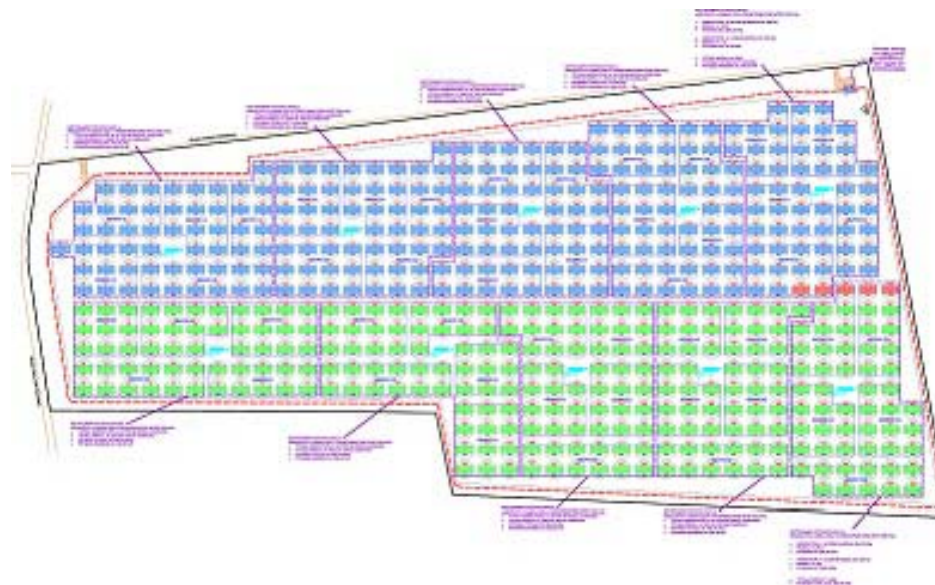
Project description

PV Plant	P_n: 6195,28 kWp
Job order	AL13
Place	Tortona (AL)
Type	One axis trackers
Modules	CSI CS6P-225P (225 Wp), CSI CS6P-230P (230 Wp), TRINA TSM-PC05 (230 Wp), CSI CS6P-235P (235 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L. 129/10) - In operation
Activities	Authorization and connection procedures, final design, working plan, works supervision



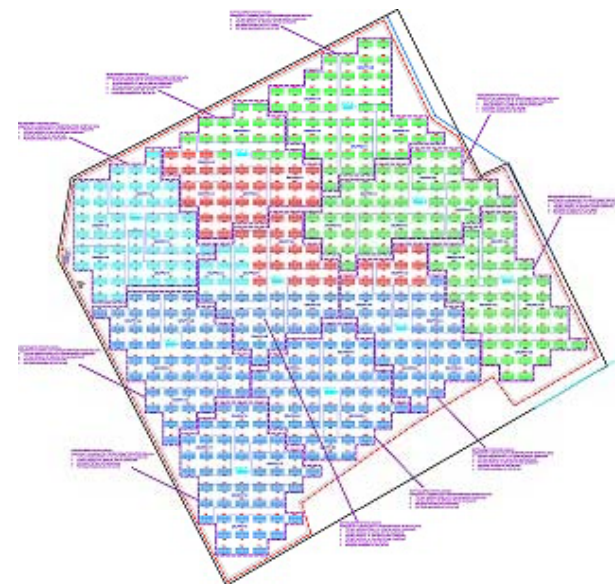
Project description

PV Plant	P_n: 6993,84 kWp
Job order	AL14
Place	Tortona (AL)
Type	One axis trackers
Modules	TRINA TSM-PC05 (225 Wp), TRINA TSM-PC05 (230 Wp), TRINA TSM-PC05 (235 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L. 129/10) - In operation
Activities	Authorization and connection procedures, final design, working plan, works supervision



Project description

PV Plant	P_n: 6581,68 kWp
Job order	AL33
Place	Bosco Marengo (AL)
Type	One axis trackers
Modules	TRINA TSM-PC05 (230 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L.129/10) - In operation
Activities	Authorization and connection procedures, Project Management, final design, working plan, works supervision



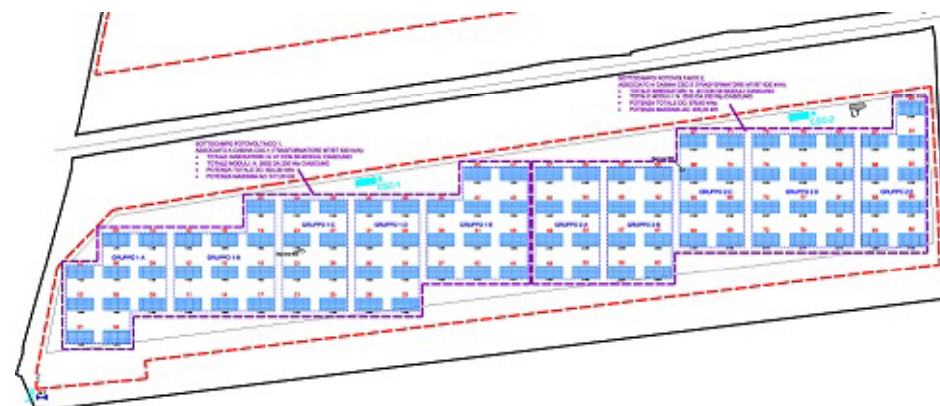
Project description

PV Plant	P_n: 4997,44 kWp
Job order	AL47a
Place	Alessandria (AL)
Type	One axis trackers
Modules	TRINA TSM-PC05 (225 Wp), TRINA TSM-PC05 (230 Wp), TRINA TSM-PC05 (235 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L.129/10) - In operation
Activities	Authorization and connection procedures, final design, working plan, works supervision



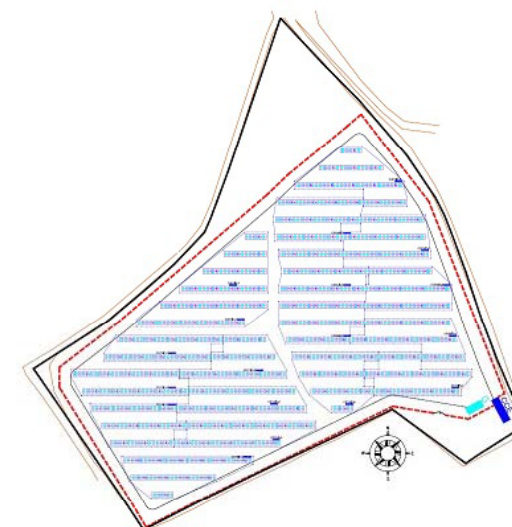
Project description

PV Plant	P_n: 1184,96 kWp
Job order	AL47b
Place	Alessandria (AL)
Type	One axis trackers
Modules	TRINA TSM-PC05 (230 Wp)
Inverters	SMA Sunny Mini Central 11000TL-10
Project stage	End of works GSE (L.129/10) - In operation
Activities	Authorization and connection procedures, final design, working plan, works supervision



Project description

PV Plant	P_n: 997,81 kWp
Job order	1113
Place	Bene Vagienna (CN)
Type	Fixed structures on ground
Modules	LDK Solar 235P-20
Inverters	POWER ONE PVI-330.0 TL
Project stage	In operation
Activities	Detail design and electrical service to practical, Project Management e works supervision



Project description

PV Plant	P_n: 102,9 kWp + 19,6 kWp
Job order	0806
Place	Nichelino (TO)
Type	Covers industrial warehouse
Modules	Azursolar M175 (175 Wp)
Inverters	Platinum 4600S
Project stage	Connected – GSE tariff granted
Activities	Working plan and electrical works supervision



Project description

PV Plant	P_n: 150,15 kWp + 19,6 kWp
Job order	0829
Place	Caselle Torinese (TO)
Type	Coverage of farm sheds
Modules	Azursolar M175 (175 Wp)
Inverters	Platinum 4600S
Project stage	Connected – GSE tariff granted
Activities	Working plan and electrical works supervision

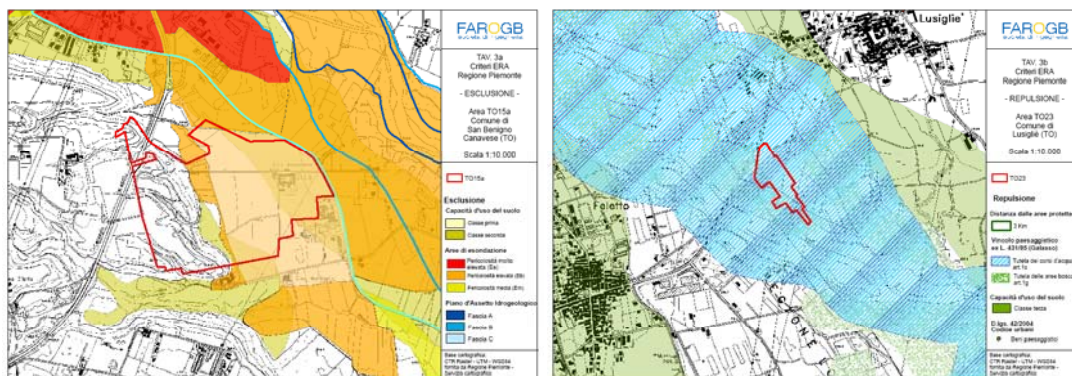


Project description

PV Plant	P_n: 978,4 kWp
Job order	0934
Place	Chieri (TO)
Type	Covers industrial warehouses
Modules	Solon Blue 230/07 (230 Wp, 235 Wp)
Inverters	SMA Sunny Central 250, 350
Project stage	Connected – GSE tariff granted
Activities	Working plan and electrical works supervision



3. VIA and VAS procedure development



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4.2.5 Suolo e sottosuolo

La realizzazione delle opere in progetto comportano necessariamente un certo "consumo" di suolo e di conseguenza una certa sottrazione di suolo all'attività agricola. Nel caso dell'impianto fotovoltaico questo consumo risulta reversibile poiché è un utilizzo limitato nel tempo e che prevede, a fine vita dell'impianto, un ripristino dei luoghi e una restituzione del terreno all'attività agricola. Per quanto riguarda la sottostazione invece il consumo non sarà reversibile poiché, come già detto, questa rimarrà in gestione a Terna anche dopo la dismissione dell'impianto fotovoltaico. Per minimizzare l'impatto sull'attività agricola si è scelto quindi di utilizzare terreni che non avessero una capacità d'uso elevata e che presentassero quindi limitazioni all'attività agricola. Pertanto la "perdita" di questi terreni ai fini agricoli non comporta un danno consistente.

Per quanto riguarda invece l'impatto diretto dell'impianto fotovoltaico sul suolo occorre sottolineare che i moduli fotovoltaici non raggiungono temperature elevate che potrebbero causare surriscaldamenti del terreno sottostante ed eventuali modifiche alle caratteristiche pedologiche ed agronomiche. Inoltre, la copertura del suolo non è totale, ma al contrario vengono lasciate libere ampie fasce di terreno tra le file dei moduli fotovoltaici.

In generale, quindi, l'impatto su suolo e sottosuolo sarà NULLO o comunque TRASCURABILE.

	Sensibilità del ricettore			
	Nulla	Basso	Medio	Alto
Magnitudo	Alta	Moderata	Moderata	Moderata
	Media	Moderata	Bassa	Moderata
	Bassa	Bassa	Bassa	Moderata
	Trascurabile	Bassa	Bassa	Moderata
	Nulla	Dismissione	Nulla	Bassa

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Figura 2.2.2. Estratto della Tavola 2 del PTA "Gli Indirizzi di Governo del Territorio" - esistenze con cerchio rosso l'area di intervento

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Environmental constraints analysis

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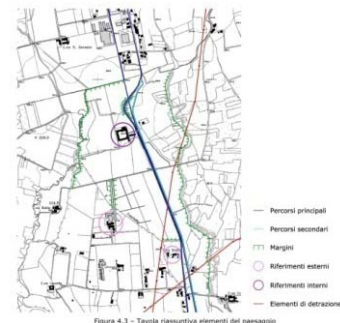
Studio di Impatto Ambientale

Progetto per la realizzazione di impianto fotovoltaico su fondo agricolo ubicato in San Benigno Canavese (TO) - Potenza impianto 24651 kW_p

dell'intervento proposto. Allo stesso modo, non ci si può basare sulle immagini mentali percepite dai diversi osservatori poiché queste risulterebbero sicuramente diverse tra di loro. Occorre quindi fornire una descrizione sistematica, in un certo senso una "schematizzazione" degli elementi che costituiscono ad oggi il paesaggio del sito T015c.

Questa lettura schematica del paesaggio può avvenire attraverso una serie di elementi ripresi dalla teoria di Kevin Lynch (The Image of the City, 1960) ed adattati alle finalità di tale relazione. Pertanto, l'analisi condotta è stata basata sul riconoscimento dei seguenti elementi:

- Persone di fruizione visiva;
- Margini visivi;
- Riferimenti esterni;
- Elementi di detrazione.



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Progetto per la realizzazione di impianto fotovoltaico su fondo agricolo ubicato in San Benigno Canavese (TO) - Potenza impianto 24651 kW_p

certo senso, un ambiente quasi chiuso, non visibile dall'esterno. Tali margini sono comunque delle barriere penetrabili, caratterizzate da un aspetto naturalistico e mutevole a seconda delle stagioni.



Figura 4.7 - Margini costituiti dalla vegetazione esistente

Un ulteriore margine di carattere non permeabile è costituito dal cavalcavia della strada provinciale SP67, localizzato nella zona nord. Questo, infatti, limita fortemente la visuale sul campo configurandosi come barriera visiva in un tratto comunque limitato.



Figura 4.8 - Cavalcavia della strada provinciale SP67

Riferimenti

I riferimenti sono elementi puntiformi, oggetti dello spazio velocemente identificabili anche a distanza, che funzionano come punto di riferimento ed orientamento. Sono generalmente costituiti da un oggetto fisico piuttosto semplicemente definito: edificio, insegna, negozio o

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Environmental impact studies



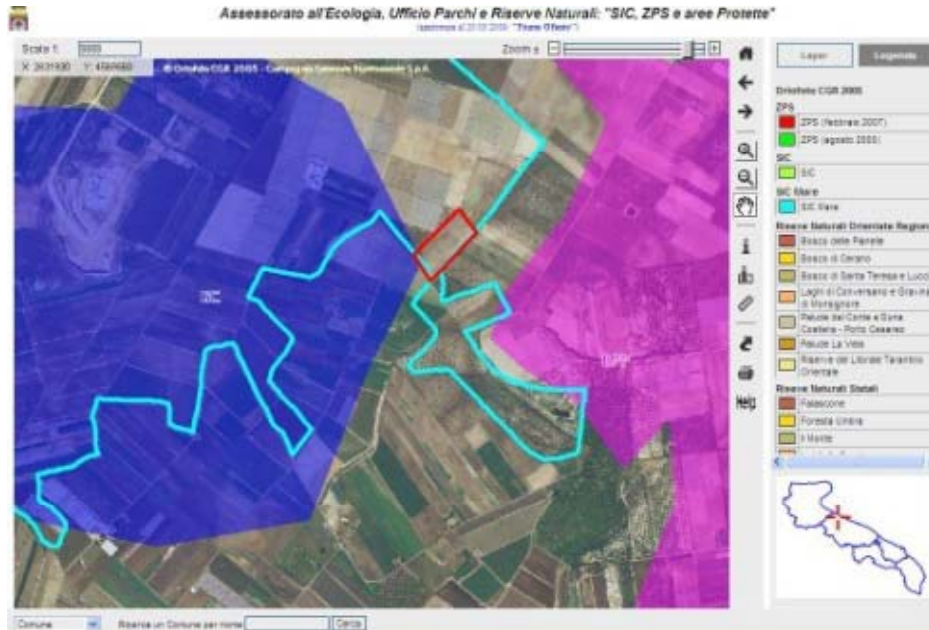
Figura 05. Effetti della mitigazione proposta sul lato ovest e della vegetazione attuale. Riferimento Fig 12 in Allegato L.



Figura 06. Effetti della mitigazione proposta sul lato ovest e della vegetazione attuale. Riferimento Fig 13 in Allegato L.

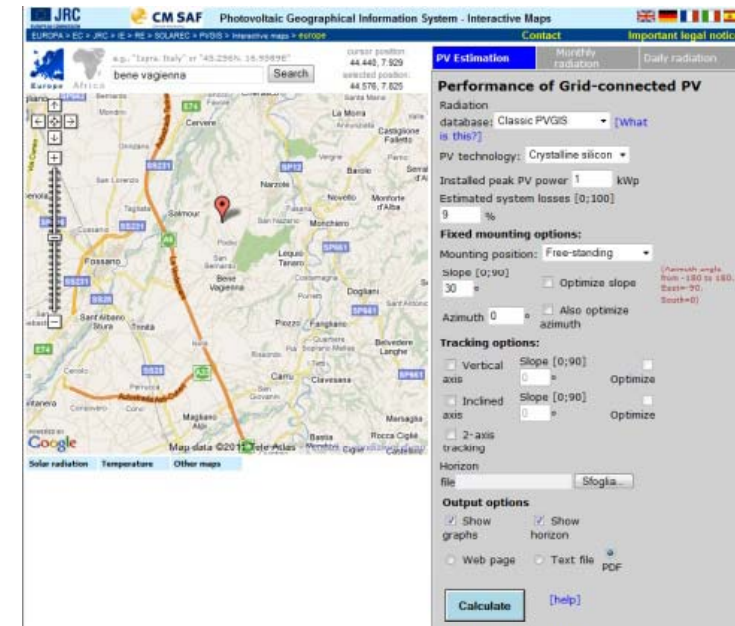
Landscape reports

4. Due diligence



National and regional regulatory system
Cadastral, property and territorial settings
Evaluation of solar electricity generation
Authorization procedure and documentation analysis

Environmental constraints analysis
Technical analysis of the project and the connection to the electrical grid
Legal analysis
Global evaluation and critical issues analysis



5. Training courses

1. Photovoltaic plants

FAROGB gives basic and expert training in PV plants design and installation, oriented towards designers and installers.

2. Electrical works

Training course for electrical works executors, according to regulation CEI 11-27, is organized in three lessons for one day each (24 h in all) and it concerns practical and theoretical knowledge (1A and 2A according to CEI 11-27) for electrical works execution.

3. Authorization procedure and connection to electrical grid of big PV plants

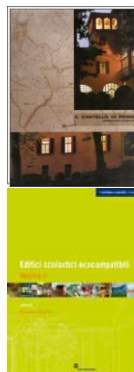
The course is organized starting from regulation setting to case studies presentation, passing through these themes:

- national and local energetic and environmental regulation setting
- authorization procedures according to art. 12 DLgs 387/2003
- Environmental Impact Evaluation ("VIA") procedure
- electrical grid connection procedures, preventive and authorization.

6. Software, applications and publications



Smartphone application



F. Rostagno, *Problematiche di adeguamento impiantistico: principi ispiratori e criteri organizzativi*, in C. Alessadria, A. Anania, D. Vincenzutto, *Il castello di Piobesi. Cronache di un restauro*, L'artistica editrice, Savigliano 2005



G. Bulgarelli, in AAVV, *Guide blu N.14 – GRUPPI ELETTROGENI*, Ed. TuttoNormel, Torino 2011



G. Bulgarelli, in AAVV, *Guide blu N.15 - FOTOVOLTAICO*, Ed. TuttoNormel, Torino 2011



A. Falco, *Un caso esemplificativo: l'area metropolitana di Barcellona*, in M. Giudice, F. Minucci, *Il consumo di suolo in Italia*, Gruppo Editoriale Esselibri Simone, Milano 2011



A. Falco, *Estratègies per a la gestió de l'ús del sòl de baixa densitat*, in Diputació de Barcelona, *Estratègies vers la ciutat de baixa densitat. De la contenció a la gestió*, ed. Diputació de Barcelona, Barcelona 2011

Where we are



How to reach us



By Train

Torino Lingotto station



By Bus

Lines 4, 41, 39, 63



By Car

Highway E70/South ring road exit Stupinigi



By Plane

Turin Airport "Sandro Pertini" - Caselle Torinese (TO)

