



# GREENChainSAW4Life

Project n° LIFE18 CCM/IT/001193

*"GREEN energy and smart forest supply CHAIN as driverS for A mountain action plan toWards climate change"*

DL.C3.2: Report on energy consumption, an overview of best available technology for small scale renewable energy production and funding guidelines

## Annex 01: Energy consumption and production dataset

Action Number and Title	C3 Resources Consumption Model and Carbon Fluxes Baseline
Task	C3.1. Inventory and mapping of energy consumption C3.2. Business analysis
Starting Date	M1
Duration	M1-M21
Due Date of Delivery	01/11/2020
Actual Submission Date	28/02/2021
Author(s)	Manuel Lai, Paolo Albertino (IRIS)
Version	1.0

## **Abstract**

This document is the Annex 01 of deliverable DL.C3.2 related to the Task C3.1.

This document contains a complete dataset of all energy consumption and production collected from the project area, divided by municipalities, by intended use, by type of fuel, etc.

## **Document information**

This document has been produced in the context of the GREENChainSAW4Life Project by Manuel Lai and Paolo Albertino (IRIS) with the contribution of the other tasks partner (Comune di Barge, Unione Montana dei Comuni del Monviso, Giusiano Legnami s.r.l.) for the retrieval of data sheet.

As this document is the design document of an experimental project, it contains confidential technical information. It is the property of IRIS Srl, GIUSIANO LEGNAMI, UNIONE MONVISO, COMUNE DI BARGE and it may not be released in its entirety or part without their consent.

## **Keyword list**

DSS, Indicators, Energy Database, Energy tool, Biomass energy, Bio-materials, Cogeneration, Energy efficiency, Green retrofit

*This project has received funding from the European Union's LIFE18 programme under grant agreement No. CCM/IT/001193.*

## TABLE OF CONTENTS

1. ENERGY CONSUMPTION AND EMISSIONS	5
1.1. BAGNOLO PIEMONTE	5
1.1.1. ELECTRIC ENERGY	5
1.1.2. HVAC ENERGY	7
1.2. COMUNE DI BARGE	9
1.2.1. ELECTRIC ENERGY	9
1.2.2. HVAC ENERGY	11
1.3. COMUNE DI BRONDELLO	15
1.3.1. ELECTRIC ENERGY	15
1.3.2. HVAC ENERGY	16
1.4. COMUNE DI CRISSOLO	18
1.4.1. ELECTRIC ENERGY	18
1.4.2. HVAC ENERGY	19
1.5. COMUNE DI ENVIE	21
1.5.1. ELECTRIC ENERGY	21
1.5.2. HVAC ENERGY	21
1.6. COMUNE DI GAMBASCA	22
1.6.1. ELECTRIC ENERGY	22
1.6.2. HVAC ENERGY	23
1.7. COMUNE DI MARTINIANA PO	25
1.7.1. ELECTRIC ENERGY	25
1.7.2. HVAC ENERGY	26
1.8. COMUNE DI ONCINO	28
1.8.1. ELECTRIC ENERGY	28
1.8.2. HVAC ENERGY	29
1.9. COMUNE DI OSTANA	31
1.9.1. ELECTRIC ENERGY	31
1.9.2. HVAC ENERGY	32
1.10. COMUNE DI PAESANA	34
1.10.1. ELECTRIC ENERGY	34
1.10.2. HVAC ENERGY	36

1.11.	COMUNE DI PAGNO	38
1.11.1.	ELECTRIC ENERGY	38
1.11.2.	HVAC ENERGY	39
1.12.	COMUNE DI REVELLO	41
1.12.1.	ELECTRIC ENERGY	41
1.12.2.	HVAC ENERGY	43
1.13.	COMUNE DI RIFREDDO	44
1.13.1.	ELECTRIC ENERGY	44
1.13.2.	HVAC ENERGY	45
1.14.	COMUNE DI SANFRONT	46
1.14.1.	ELECTRIC ENERGY	46
1.14.2.	HVAC ENERGY	48

## 1. ENERGY CONSUMPTION AND EMISSIONS

### 1.1. BAGNOLO PIEMONTE

#### 1.1.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				$kW_p$	$kWh_{el}/year$					$kW_p$
1.1	PU	EL + HVAC	MUNICIPIO	15,0	38.128					11.896
1.2	PU	EL	SCUOLA MATERNA + PALESTRA	10,0	6.042					1.885
1.3	PU	EL + HVAC	PALESTRA	15,0	14.094					4.397
1.4	PU	EL + HVAC	SCUOLA PRIMARIA	50,0	19.010	1	FOTOVOLTAICO	20	19.436	5.931
1.5	PU	EL + HVAC	SCUOLE MEDIE	50,0	34.805					10.859

1.6	PU	EL + HVAC	BIBLIOTECA	6,0	6.082				1.898
1.7	PU	EL + HVAC	ARCHIVIO STORICO	3,0	0				
1.8	PU	EL	TORRE STORICA	3,0	67				21
1.9	PU	EL	BOLLATRICE LUSERNA	3,0	182				57
1.10	PU	EL	BOLLATRICE CAVE 2	3,0	104				32
1.11	PU	EL	LOCALI EX PESO	6,0	6.158				1.921
1.12	PU	EL	CIMITERO CAPOLUOGO	1,5	447				139
1.13	PU	EL	CIMITERO FRAZ.VILLAR	1,0	24				7
1.14	PU	EL	CIMITERO VILLARETTO	1,0	222				69
1.15	PU	EL	MAGAZZINO 1	3,0	639				199
1.16	PU	EL	MAGAZZINO 2	1,5	508				158
1.17	PU	EL	PESO PUBBLICO	3,0	5.045				1.574
1.18	PU	EL + HVAC	SALA CONFERENZE	3,0	668				208
1.19	PU	EL + HVAC	SCUOLA ELEMENTARE VILLARETTO	6,0	3.688				1.151
1.20	PU	EL + HVAC	EX MUNICIPIO	6,0	1.152				359
1.21	PU	EL	LOCALI EX PROLOCO	3,0	1.070				334
1.22	PU	EL + HVAC	TEATRO SILVIO PELLICO	22,0	3.044				950
1.23	PU	EL	PIAZZA MERCATO	6,0	630				196
1.24	PU	EL	PARCHI E GIARDINI	1,5	0				
1.A	PU	EL	ILLUMINAZIONE PUBBLICA	0,5	606.886				189.348
1.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI		3.343.316				1.043.115
1.C	PR	EL	EDIFICI RESIDENZIALI		6.012.300				1.875.838
1.D	PR	EL	AGRICOLTURA		336.721				105.057
1.E	PR	EL	INDUSTRIE		6.531.555				2.037.845

### 1.1.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY	
						INSTALLED POWER	FUEL CONSUMPTION	ENERGY CONSUMED		
					<i>kWh<sub>el</sub>/year</i>	<i>kW<sub>p</sub></i>	<i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	<i>kWh<sub>th</sub>/year</i>	<i>kgCO<sub>2</sub>/year</i>	
1.1	PU	EL + HVAC	MUNICIPIO	GAS NATURALE		110	10.437	<i>Sm<sup>3</sup>/year</i>	98.541	19.905
1.2	PU	EL	SCUOLA MATERNA + PALESTRA							
1.3	PU	EL + HVAC	PALESTRA	GAS NATURALE		400	34.013	<i>Sm<sup>3</sup>/year</i>	321.128	64.868
1.4	PU	EL + HVAC	SCUOLA PRIMARIA	GAS NATURALE		60	4.069	<i>Sm<sup>3</sup>/year</i>	38.417	7.760
1.5	PU	EL + HVAC	SCUOLE MEDIE	GAS NATURALE		300	33.452	<i>Sm<sup>3</sup>/year</i>	315.828	63.797
1.6	PU	EL + HVAC	BIBLIOTECA	GAS NATURALE		24	2.988	<i>Sm<sup>3</sup>/year</i>	28.213	5.699
1.7	PU	EL + HVAC	ARCHIVIO STORICO	GAS NATURALE		24	513	<i>Sm<sup>3</sup>/year</i>	4.843	978
1.8	PU	EL	TORRE STORICA							
1.9	PU	EL	BOLLATRICE LUSERNA							
1.10	PU	EL	BOLLATRICE CAVE 2							
1.11	PU	EL	LOCALI EX PESO							
1.12	PU	EL	CIMITERO CAPOLUOGO							

1.13	PU	EL	CIMITERO FRAZ.VILLAR							
1.14	PU	EL	CIMITERO VILLARETTO							
1.15	PU	EL	MAGAZZINO 1							
1.16	PU	EL	MAGAZZINO 2							
1.17	PU	EL	PESO PUBBLICO							
1.18	PU	EL + HVAC	SALA CONFERENZE	GAS NATURALE		24	1.426	<i>Sm<sup>3</sup>/year</i>	13.461	2.719
1.19	PU	EL + HVAC	SCUOLA ELEMENTARE VILLARETTO	GASOLIO		58	3.000	<i>litres/year</i>	30.269	8.082
1.20	PU	EL + HVAC	EX MUNICIPIO							
1.21	PU	EL	LOCALI EX PROLOCO							
1.22	PU	EL + HVAC	TEATRO SILVIO PELLICO	GASOLIO			1.000	<i>litres/year</i>	10.090	2.694
1.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					6.103.581	738.533
	PR			GAS NATURALE					15.442.960	3.119.478
	PR			GASOLIO					6.389.679	1.706.044
	PR			GPL					5.810.159	1.318.906
	PR			SOLARE TERMICO					77.855	
	PR			HVAC EN. EL. (POMPE DI CALORE)	6.164.481					1.923.318
	PR			TLR BIOMASSA						
	PR			TLR GAS NATURALE						
	PR			FOTOVOLTAICO HVAC	60.731					



	PR		EOLICO HVAC					
--	----	--	-------------	--	--	--	--	--

## 1.2. COMUNE DI BARGE

### 1.2.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				$kW_p$	$kWh_{el}/year$			$kW_p$	$kWh_{el}/year$	$kgCO_2/year$
2.1	PU	EL	MUNICIPIO (uffici, archivio, unitre)	31,3	42.284					13.193
2.2	PU	EL + HVAC	BIBLIOTECA 1 (piano terreno uff. turistico sala Gejmonat)	20,0	8.443					2.634
2.3	PU	HVAC	BIBLIOTECA 2 (primo piano lato viale Mazzini con consolle bibliotecario)							
2.4	PU	HVAC	BIBLIOTECA 3 (sezione giovani, caldaia primo piano lato piazza Garibaldi)							
2.5	PU	EL + HVAC	SCUOLA PRIMARIA CAPOLUOGO	25,0	27.254					8.503

2.6	PU	EL + HVAC	SCUOLA SECONDARIA	22,0	17.588					5.487
2.7	PU	EL + HVAC	SCUOLA MATERNA CAPOLUOGO	15,0	15.729	1	FOTOVOLTAICO	6	5.566	4.907
2.8	PU	EL + HVAC	SCUOLA MATERNA E PRIMARIA SAN MARTINO	10,0	4.881	1	FOTOVOLTAICO	19	13.958	1.523
2.9	PU	EL + HVAC	SCUOLA PRIMARIA CROCERA	10,0	8.974	1	FOTOVOLTAICO	4	4.817	2.800
2.10	PU	EL + HVAC	IMPIANTI SPORTIVI	50,0	10.255	1	FOTOVOLTAICO	18	15.152	3.200
2.11	PU	EL + HVAC	MAGAZZINO COMUNALE	6,0	3.280					1.023
2.15	PU	EL + HVAC	EX OFFICINA FERROVIARIA		3.334					1.040
2.16	PU	EL	ELISUPERFICIE	3,0	159					50
2.17	PU	EL	PRESIDIO SOCIALE	6,0	3.645					1.137
2.18	PU	EL	PESO PUBBLICO	1,5	0					
2.19	PU	EL	LAGHETTO PESCATORI	3,0	894					279
2.20	PU	EL	CIMITERO	1,5	643					201
2.21	PU	EL	SIRENA PARROCCHIALE	10,0						
2.22	PU	EL	AREA MERCATO	25,0	3.270					1.020
2.23	PU	EL	ALA MERCATALE	15,0	2.145					669
2.24	PU	EL + HVAC	CENTRO SOCIALE	6,0	5.449					1.700
2.25	PU	EL + HVAC	TETTOIA CENTRO SOCIALE	3,0	2.528					789
2.26	PU	EL	RIPETITORE RADIO	1,5	157					49
2.27	PU	EL + HVAC	SPOGLIATOIO CROCERA	3,0	3.643					1.137
2.28	PU	EL	IRRIGAZIONE AIUOLE	1,5	0					
2.29	PU	EL	IRRIGAZIONE AIUOLE	1,5	0					

2.30	PU	EL + HVAC	PESO PUBBLICO SAN MARTINO	3,0	118				37
2.31	PU	HVAC	CIMITERO UFFICIO -VIA SAN MARTINO SN						
2.32	PU	EL	SEMAFORO	1,0	0				
2.33	PU	EL	UNITRE	1,5	142				44
2.34	PU	EL	ASSOCIAZIONI	1,5	213				66
2.35	PU	EL	PARTI COMUNI	1,5	82				26
2.36	PU	HVAC	SCUOLA ELEMENTARE SAN MARTINO						
2.37	PU	HVAC	UNITÀ ABITATIVA						
2.A	PU	EL	ILLUMINAZIONE PUBBLICA	2,1	677.479				211.373
				3,3					
2.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		4.737.441				1.478.082
2.C	PR	EL	EDIFICI RESIDENZIALI		7.237.717				2.258.168
2.D	PR	EL	AGRICOLTURA		3.346.608				1.044.142
2.E	PR	EL	INDUSTRIE		24.360.018				7.600.326
2.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA			1	FOTOVOLTAICO		225.315
	PR	HVAC				5	EOLICO		10.868

### 1.2.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY	
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER	FUEL CONSUMPTION	ENERGY CONSUMED	<i>kgCO<sub>2</sub>/year</i>	
						<i>kW<sub>p</sub></i>	<i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	<i>kWh<sub>th</sub>/year</i>		
2.1	PU	EL	MUNICIPIO (uffici, archivio, unitre)	GAS NATURALE			9.497	<i>Sm<sup>3</sup>/year</i>	89.664	18.112
2.2	PU	EL + HVAC	BIBLIOTECA 1 (piano terreno uff. turistico sala Gejmonat)	GAS NATURALE			2.536	<i>Sm<sup>3</sup>/year</i>	23.942	4.836
2.3	PU	HVAC	BIBLIOTECA 2 (primo piano lato viale Mazzini con consolle bibliotecario)	GAS NATURALE			2.896	<i>Sm<sup>3</sup>/year</i>	27.342	5.523
2.4	PU	HVAC	BIBLIOTECA 3 (sezione giovani, caldaia primo piano lato piazza Garibaldi)	GAS NATURALE			1.221	<i>Sm<sup>3</sup>/year</i>	11.527	2.329
2.5	PU	EL + HVAC	SCUOLA PRIMARIA CAPOLUOGO	GAS NATURALE		290	6.511	<i>Sm<sup>3</sup>/year</i>	61.470	12.417
2.6	PU	EL + HVAC	SCUOLA SECONDARIA	GAS NATURALE		290	42.077	<i>Sm<sup>3</sup>/year</i>	397.262	80.247
2.7	PU	EL + HVAC	SCUOLA MATERNA CAPOLUOGO	GAS NATURALE		140	19.056	<i>Sm<sup>3</sup>/year</i>	179.913	36.342
2.8	PU	EL + HVAC	SCUOLA MATERNA E PRIMARIA SAN MARTINO	GAS NATURALE		105	6.601	<i>Sm<sup>3</sup>/year</i>	62.322	12.589
2.9	PU	EL + HVAC	SCUOLA PRIMARIA CROCERA	TLR BIOMASSA		120			32.533	3.936
2.10	PU	EL + HVAC	IMPIANTI SPORTIVI	GAS NATURALE			989	<i>Sm<sup>3</sup>/year</i>	9.342	1.887

2.11	PU	EL + HVAC	MAGAZZINO COMUNALE	GAS NATURALE			2.048	Sm <sup>3</sup> /year	19.334	3.906
2.12	PU	HVAC	PALAZZO COMUNALE - LOCALI UFFICIO TECNICO	GAS NATURALE			2.424	Sm <sup>3</sup> /year	22.886	4.623
2.13	PU	HVAC	PALAZZO COMUNALE - UFFICI AMMINISTRATIVI, TRIBUTI, CONTABILITA', SEGRETERIA, DEMOGRAFICI, POLIZIA MUNICIPALE	GAS NATURALE			9.792	Sm <sup>3</sup> /year	92.449	18.675
2.14	PU	HVAC	CASERMA VIGILI DEL FUOCO	GAS NATURALE			1.107	Sm <sup>3</sup> /year	10.452	2.111
2.15	PU	EL + HVAC	EX OFFICINA FERROVIARIA	HVAC EN. EL. (POMPE DI CALORE)	3.334					1.040
2.16	PU	EL	ELISUPERFICIE				388		3.663	
2.17	PU	EL	PRESIDIO SOCIALE	TLR BIOMASSA					17.116	2.071
2.18	PU	EL	PESO PUBBLICO							
2.19	PU	EL	LAGHETTO PESCATORI							
2.20	PU	EL	CIMITERO							
2.21	PU	EL	SIRENA PARROCCHIALE							
2.22	PU	EL	AREA MERCATO							
2.23	PU	EL	ALA MERCATALE							
2.24	PU	EL + HVAC	CENTRO SOCIALE	GAS NATURALE			4.595	Sm <sup>3</sup> /year	43.380	8.763
2.25	PU	EL + HVAC	TETTOIA CENTRO SOCIALE	GAS NATURALE			2.574	Sm <sup>3</sup> /year	24.299	4.908
2.26	PU	EL	RIPETITORE RADIO							
2.27	PU	EL + HVAC	SPOGLIATOIO CROCERA	GAS NATURALE			210	Sm <sup>3</sup> /year	1.983	400
2.28	PU	EL	IRRIGAZIONE AIUOLE							
2.29	PU	EL	IRRIGAZIONE AIUOLE							
2.30	PU	EL + HVAC	PESO PUBBLICO SAN MARTINO	GAS NATURALE			217	Sm <sup>3</sup> /year	2.049	414

2.31	PU	HVAC	CIMITERO UFFICIO -VIA SAN MARTINO SN	GAS NATURALE			223	Sm <sup>3</sup> /year	2.105	425
2.32	PU	EL	SEMAFORO							
2.33	PU	EL	UNITRE	GAS NATURALE			2.412	Sm <sup>3</sup> /year	22.772	4.600
2.34	PU	EL	ASSOCIAZIONI							
2.35	PU	EL	PARTI COMUNI							
2.36	PU	HVAC	SCUOLA ELEMENTARE SAN MARTINO	GAS NATURALE			6.683	Sm <sup>3</sup> /year	63.096	12.745
2.37	PU	HVAC	UNITÀ ABITATIVA							
2.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)							
2.C	PR	EL	EDIFICI RESIDENZIALI							
2.D	PR	EL	AGRICOLTURA							
2.E	PR	EL	INDUSTRIE							
2.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					15.045.388	1.820.492
	PR	HVAC		GAS NATURALE					19.934.238	4.026.716
	PR	HVAC		GASOLIO					6.609.973	1.764.863
	PR	HVAC		GPL					4.982.787	1.131.093
	PR	HVAC		SOLARE TERMICO					80.576	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	10.752.910					3.354.908
	PR	HVAC		TLR BIOMASSA					154.797	12.477
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC	225.315					
	PR	HVAC		EOLICO HVAC	10.868					

### 1.3. COMUNE DI BRONDELLO

#### 1.3.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>			<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>	
3.1	PU	EL + HVAC	MUNICIPIO	6,0	2.904					906
3.2	PU	EL + HVAC	AMBULATORIO - ARCHIVIO	3,3	256					80
3.3	PU	EL	BRUCIATORI - CT	1,5	5					2
3.4	PU	EL	CAMERA MORTUARIA	1,5	0					
3.5	PU	EL + HVAC	PALESTRA	6,0	2.879					898
3.6	PU	EL + HVAC	EX SEDE COMUNALE	3,0	191					60
3.7	PU	EL	RIPETITORE UNIONE MONTANA MONVISO	1,5	600					187
3.8	PU	HVAC	ALLOGGIO COMUNALE							
3.9	PU	HVAC	CENTRO POLIFUNZIONALE							
3.A	PU	EL	ILLUMINAZIONE PUBBLICA		46.387					14.473
3.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		74.225					23.158
3.C	PR	EL	EDIFICI RESIDENZIALI		285.814					89.174

3.D	PR	EL	AGRICOLTURA		3.270					1.020
3.E	PR	EL	INDUSTRIE		147					46

### 1.3.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY	
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER	FUEL CONSUMPTION	ENERGY CONSUMED	<i>kgCO<sub>2</sub>/year</i>	
						<i>kW<sub>p</sub></i>	<i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	<i>kWh<sub>th</sub>/year</i>		
3.1	PU	EL + HVAC	MUNICIPIO	GAS NATURALE			2.180 <i>Sm<sup>3</sup>/year</i>	20.582	4.158	
3.2	PU	EL + HVAC	AMBULATORIO - ARCHIVIO	GAS NATURALE			133 <i>Sm<sup>3</sup>/year</i>	1.256	254	
3.3	PU	EL	BRUCIATORI - CT							
3.4	PU	EL	CAMERA MORTUARIA							
3.5	PU	EL + HVAC	PALESTRA	GAS NATURALE			280 <i>Sm<sup>3</sup>/year</i>	2.644	534	
3.6	PU	EL + HVAC	EX SEDE COMUNALE							
3.7	PU	EL	RIPETITORE UNIONE MONTANA MONVISO							
3.8	PU	HVAC	ALLOGGIO COMUNALE							
3.9	PU	HVAC	CENTRO POLIFUNZIONALE	GAS NATURALE			16 <i>Sm<sup>3</sup>/year</i>	151	31	
3.A	PU	EL	ILLUMINAZIONE PUBBLICA							
3.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI							



			TERZIARI (NON COMUNALI)							
3.C	PR	EL	EDIFICI RESIDENZIALI							
3.D	PR	EL	AGRICOLTURA							
3.E	PR	EL	INDUSTRIE							
3.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					425.757	51.517
	PR	HVAC		GAS NATURALE					455.732	92.058
	PR	HVAC		GASOLIO					107.997	28.835
	PR	HVAC		GPL					385.310	87.465
	PR	HVAC		SOLARE TERMICO					0	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	689.438					215.105
	PR	HVAC		TLR BIOMASSA					0	
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC						
	PR	HVAC		EOLICO HVAC						

## 1.4. COMUNE DI CRISSOLO

### 1.4.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>			<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>	<i>kgCO<sub>2</sub>/year</i>
4.1	PU	EL + HVAC	MUNICIPIO	3,0	9.937					3.100
4.2	PU	EL	CIMITERO	1,5	174					54
4.3	PU	EL	EX MULINO	6,0	1.919	1	FOTOVOLTAICO		21.425	599
4.4	PU	EL	AUTORIMESSA	6,0	73					23
4.5	PU	EL + HVAC	SALA POLIVALENTE	6,0	1.827					570
4.6	PU	EL	WC SEGGIOVIA		1.827					570
4.7	PU	EL	TELECAMERE		212					66
4.8	PU	EL	RIPETITORE		3.073					959
4.9	PU	EL	CENTRALINA		95	2	IDROELETTRICO		128.531	30
4.A	PU	EL	ILLUMINAZIONE PUBBLICA		73.669					22.985
4.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		299.826					93.546
4.C	PR	EL	EDIFICI RESIDENZIALI		344.341					107.434
4.D	PR	EL	AGRICOLTURA		29.184					9.105
4.E	PR	EL	INDUSTRIE		31.809					9.924

### 1.4.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY	
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER <i>kW<sub>p</sub></i>	FUEL CONSUMPTION <i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	ENERGY CONSUMED <i>kWh<sub>th</sub>/year</i>		<i>kgCO<sub>2</sub>/year</i>
4.1	PU	EL + HVAC	MUNICIPIO	GASOLIO		100	4.617	<i>litres/year</i>	46.583	12.438
4.2	PU	EL	CIMITERO							
4.3	PU	EL	EX MULINO							
4.4	PU	EL	AUTORIMESSA							
4.5	PU	EL + HVAC	SALA POLIVALENTE	GPL		26	280	<i>Sm<sup>3</sup>/year</i>	6.629	1.505
4.6	PU	EL	WC SEGGIOVIA							
4.7	PU	EL	TELECAMERE							
4.8	PU	EL	RIPETITORE							
4.9	PU	EL	CENTRALINA							
4.A	PU	EL	ILLUMINAZIONE PUBBLICA							
4.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)							
4.C	PR	EL	EDIFICI RESIDENZIALI							
4.D	PR	EL	AGRICOLTURA							
4.E	PR	EL	INDUSTRIE							
4.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					293.176	35.474
	PR	HVAC		GAS NATURALE					199.900	40.380

	PR	HVAC		GASOLIO					401.762	107.270
	PR	HVAC		GPL					141.901	32.212
	PR	HVAC		SOLARE TERMICO					719	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	236.574					73.811
	PR	HVAC		TLR BIOMASSA					0	
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC						
	PR	HVAC		EOLICO HVAC						

## 1.5. COMUNE DI ENVIE

### 1.5.1. ELECTRIC ENERGY

For the municipality of Envie it was not possible to find the consumption data of public buildings and private buildings with the method from real bills as the municipality is no longer part of the Unione Monviso. The data were then determined by multiplying the number of inhabitants of the municipality by a pro-understanding consumption of 4 MWh / year. This value is the result of an average consumption per inhabitant in the project area relating to municipalities similar to Envie.

### 1.5.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC <i>kWh<sub>e</sub>/year</i>	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY <i>kgCO<sub>2</sub>/year</i>	
						INSTALLED POWER <i>kW<sub>p</sub></i>	FUEL CONSUMPTION <i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	ENERGY CONSUMED <i>kWh<sub>th</sub>/year</i>		
5.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE				2.714.509	328.456	
	PR	HVAC		GAS NATURALE				3.108.534	627.924	
	PR	HVAC		GASOLIO				1.518.005	405.307	
	PR	HVAC		GPL				1.348.638	306.141	
	PR	HVAC		SOLARE TERMICO				14.074		
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	2.017.306					629.400
	PR	HVAC		TLR BIOMASSA					293.983	23.695

	PR	HVAC		FOTOVOLTAICO HVAC	1.896					
--	----	------	--	----------------------	-------	--	--	--	--	--

## 1.6. COMUNE DI GAMBASCA

### 1.6.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				$kW_p$	$kWh_{el}/year$			$kW_p$	$kWh_{el}/year$	
6.1	PU	EL + HVAC	MUNICIPIO	6,0	6.307					1.968
6.2	PU	EL	CIMITERO	3,0	89					28
6.3	PU	EL	MAGAZZINO PROTEZIONE CIVILE	3,0	717					224
6.4	PU	EL	MAGAZZINO COMUNALE ED. RES.	3,0	136					42
6.5	PU	EL	AREA MERCATALE	3,0	8					2
6.6	PU	EL	LUCE SCALE ED. RES.	3,0	112					35
6.A	PU	EL	ILLUMINAZIONE PUBBLICA	15,0	30.502					9.517
6.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		129.363					40.361
6.C	PR	EL	EDIFICI RESIDENZIALI		360.612					112.511

6.D	PR	EL	AGRICOLTURA		17.463					5.448
6.E	PR	EL	INDUSTRIE		44.225					13.798

### 1.6.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY	
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER	FUEL CONSUMPTION	ENERGY CONSUMED		<i>kgCO<sub>2</sub>/year</i>
						<i>kW<sub>p</sub></i>	<i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	<i>kWh<sub>th</sub>/year</i>		
6.1	PU	EL + HVAC	MUNICIPIO	GAS NATURALE		37	4.861 <i>Sm<sup>3</sup>/year</i>	45.894	9.271	
6.2	PU	EL	CIMITERO							
6.3	PU	EL	MAGAZZINO PROTEZIONE CIVILE							
6.4	PU	EL	MAGAZZINO COMUNALE ED. RES.							
6.5	PU	EL	AREA MERCATALE							
6.6	PU	EL	LUCE SCALE ED. RES.							
6.A	PU	EL	ILLUMINAZIONE PUBBLICA							
6.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)							
6.C	PR	EL	EDIFICI RESIDENZIALI							
6.D	PR	EL	AGRICOLTURA							
6.E	PR	EL	INDUSTRIE							

6.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					196.673	23.797
	PR	HVAC		GAS NATURALE					855.313	172.773
	PR	HVAC		GASOLIO					151.039	40.327
	PR	HVAC		GPL					240.614	54.619
	PR	HVAC		SOLARE TERMICO					0	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	728.985					227.443
	PR	HVAC		TLR BIOMASSA					0	
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC						
	PR	HVAC		EOLICO HVAC						



## 1.7. COMUNE DI MARTINIANA PO

### 1.7.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY kgCO <sub>2</sub> /year
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>			<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>	
7.1	PU	EL + HVAC	MUNICIPIO + FARMACIA	3,0	422					132
7.2	PU	EL + HVAC	SCUOLA ELEMENTARE	6,0	6.101					1.904
7.3	PU	EL + HVAC	SCUOLA MATERNA	6,0	4.000					1.248
7.4	PU	EL + HVAC	UFFICIO POSTALE	3,0	2.500					780
7.5	PU	HVAC	PALESTRA							
7.6	PU	EL + HVAC	SALA CONVEGNI	3,0	0					
7.7	PU	EL	ALTRI USI	3,0	1.563					488
7.A	PU	EL	ILLUMINAZIONE PUBBLICA	55,0	43.993					13.726
7.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		181.802					56.722
7.C	PR	EL	EDIFICI RESIDENZIALI		839.953					262.065
7.D	PR	EL	AGRICOLTURA		49.247					15.365
7.E	PR	EL	INDUSTRIE		401.983					125.419

### 1.7.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY	
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER <i>kW<sub>p</sub></i>	FUEL CONSUMPTION <i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	ENERGY CONSUMED <i>kWh<sub>th</sub>/year</i>	<i>kgCO<sub>2</sub>/year</i>	
7.1	PU	EL + HVAC	MUNICIPIO + FARMACIA	TLR BIOMASSA					30.550	3.697
7.2	PU	EL + HVAC	SCUOLA ELEMENTARE	TLR BIOMASSA					25.469	3.082
7.3	PU	EL + HVAC	SCUOLA MATERNA	TLR BIOMASSA					36.503	4.417
7.4	PU	EL + HVAC	UFFICIO POSTALE	TLR BIOMASSA					13.765	1.666
7.5	PU	HVAC	PALESTRA	TLR BIOMASSA					44.128	5.340
7.6	PU	EL + HVAC	SALA CONVEGNI	GAS NATURALE			4.871	<i>Sm<sup>3</sup>/year</i>	45.989	9.290
7.7	PU	EL	ALTRI USI							
7.A	PU	EL	ILLUMINAZIONE PUBBLICA							
7.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)							
7.C	PR	EL	EDIFICI RESIDENZIALI							
7.D	PR	EL	AGRICOLTURA							
7.E	PR	EL	INDUSTRIE							

7.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					0	
	PR	HVAC		GAS NATURALE					0	
	PR	HVAC		GASOLIO					0	
	PR	HVAC		GPL					0	
	PR	HVAC		SOLARE TERMICO					0	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)						
	PR	HVAC		TLR BIOMASSA					0	
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC						
	PR	HVAC		EOLICO HVAC						

## 1.8. COMUNE DI ONCINO

### 1.8.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>			<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>	
8.1	PU	EL	GARAGE	6,0	1.400					437
8.2	PU	EL	MUNICIPIO 1	1,0	2.000					624
8.3	PU	EL	FABBRICATO TIROLO	3,0	1.000					312
8.4	PU	EL	RIFUGIO	1,0	1.000					312
8.5	PU	EL	MUNICIPIO 2	6,0	6.468					2.018
8.6	PU	EL	ALTRI USI	3,0	943					294
8.7	PU	EL	ALTRI USI	2,0	301					94
8.8	PU	EL	ALTRI USI	10,0	0					
8.A	PU	EL	ILLUMINAZIONE PUBBLICA	0,5	11.233					3.505
8.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		19.669					6.137
8.C	PR	EL	EDIFICI RESIDENZIALI		94.828					29.586
8.D	PR	EL	AGRICOLTURA		0					
8.E	PR	EL	INDUSTRIE		131					41

1.8.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY					
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER	FUEL CONSUMPTION	ENERGY CONSUMED	
						<i>kW<sub>p</sub></i>	<i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	<i>kWh<sub>th</sub>/year</i>	
8.1	PU	EL	GARAGE						
8.2	PU	EL	MUNICIPIO 1						
8.3	PU	EL	FABBRICATO TIROLO						
8.4	PU	EL	RIFUGIO						
8.5	PU	EL	MUNICIPIO 2						
8.6	PU	EL	ALTRI USI						
8.7	PU	EL	ALTRI USI						
8.8	PU	EL	ALTRI USI						
8.A	PU	EL	ILLUMINAZIONE PUBBLICA						

8.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)							
8.C	PR	EL	EDIFICI RESIDENZIALI							
8.D	PR	EL	AGRICOLTURA							
8.E	PR	EL	INDUSTRIE							
8.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					190.442	23.043
	PR	HVAC		GAS NATURALE					167.881	33.912
	PR	HVAC		GASOLIO					49.367	13.181
	PR	HVAC		GPL					5.356	1.216
	PR	HVAC		SOLARE TERMICO					0	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	246.488					76.904
	PR	HVAC		TLR BIOMASSA					0	
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC						
	PR	HVAC		EOLICO HVAC						

## 1.9. COMUNE DI OSTANA

### 1.9.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>			<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>	<i>kgCO<sub>2</sub>/year</i>
9.1	PU	EL + HVAC	MUNICIPIO + MUSEO	3,0	7.243	1	FOTOVOLTAICO	8	7.500	2.260
9.2	PU	EL + HVAC	CASE POPOLARI VALENTIN	3,0	1.285					401
9.3	PU	EL + HVAC	CENTRO BENESSERE + PANETTERIA	60,0	10.000					3.120
9.4	PU	EL + HVAC	AUTORIMESSE + PORTA DEL MONVISO	3,0	8.387					2.617
9.5	PU	EL + HVAC	RIFUGIO LA GALABERNA	3,0	5.000					1.560
9.7	PU	EL	AUTORIMESSA	15,0	8.488					2.648
9.8	PU	EL + HVAC	LOU PURTOUN	20,0	5.100					1.591
9.A	PU	EL	ILLUMINAZIONE PUBBLICA	15,0	15.782					4.924
9.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		95.233					29.713
9.C	PR	EL	EDIFICI RESIDENZIALI		93.019					29.022

9.D	PR	EL	AGRICOLTURA		0					
9.E	PR	EL	INDUSTRIE		2.567					801

### 1.9.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY	
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER	FUEL CONSUMPTION	ENERGY CONSUMED		<i>kgCO<sub>2</sub>/year</i>
						<i>kW<sub>p</sub></i>	<i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	<i>kWh<sub>th</sub>/year</i>		
9.1	PU	EL + HVAC	MUNICIPIO + MUSEO	GASOLIO		50	8.872	<i>kg/year</i>	110.438	29.487
9.2	PU	EL + HVAC	CASE POPOLARI VALENTIN	GASOLIO		40	2.000	<i>kg/year</i>	23.740	6.339
9.3	PU	EL + HVAC	CENTRO BENESSERE + PANETTERIA	HVAC EN. EL. (POMPE DI CALORE)	40.000					12.480
9.4	PU	EL + HVAC	AUTORIMESSE + PORTA DEL MONVISO							
9.5	PU	EL + HVAC	RIFUGIO LA GALABERNA	GPL		50	7.000	<i>kg/year</i>	89.670	20.355
9.7	PU	EL	AUTORIMESSA							
9.8	PU	EL + HVAC	LOU PURTOUN	BIOMASSE SOLIDE			9.000	<i>kg/year</i>	43.920	5.314
9.A	PU	EL	ILLUMINAZIONE PUBBLICA							
9.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI							



			TERZIARI (NON COMUNALI)							
9.C	PR	EL	EDIFICI RESIDENZIALI							
9.D	PR	EL	AGRICOLTURA							
9.E	PR	EL	INDUSTRIE							
9.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					265.339	32.106
	PR	HVAC		GAS NATURALE					180.726	36.507
	PR	HVAC		GASOLIO					127.645	34.081
	PR	HVAC		GPL					22.462	5.099
	PR	HVAC		SOLARE TERMICO					198	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	234.296					73.100
	PR	HVAC		TLR BIOMASSA						
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC						
	PR	HVAC		EOLICO HVAC						

## 1.10. COMUNE DI PAESANA

### 1.10.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY							
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY	
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED		
				<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>			<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>		<i>kgCO<sub>2</sub>/year</i>
10.1	PU	EL	MUNICIPIO	25,0	8.582						2.678
10.2	PU	EL	MUNICIPIO	3,0	60						19
10.3	PU	EL	MUNICIPIO	3,0	116						36
10.4	PU	EL	SCUOLA SECONDARIA	6,0	1.531						478
10.5	PU	EL + HVAC	SCUOLA PRIMARIA	25,0	17.462	1	FOTOVOLTAICO	10	11.500		5.448
10.6	PU	HVAC	SCUOLA MATERNA								
10.7	PU	EL	EDIFICIO PROPRIETA' COMUNALE	6,0	815						254
10.8	PU	EL	EDIFICIO PROPRIETA' COMUNALE	1,0	311						97
10.9	PU	EL	EDIFICIO PROPRIETA' COMUNALE	6,0	2.531						790
10.10	PU	EL	EDIFICIO PROPRIETA' COMUNALE	3,0	3.945						1.231
10.11	PU	EL	EDIFICIO PROPRIETA' COMUNALE	6,0	11.871						3.704
10.12	PU	EL	EDIFICIO PROPRIETA' COMUNALE	6,0	698						218
10.13	PU	EL	EDIFICIO PROPRIETA' COMUNALE	6,0	14.352						4.478

10.14	PU	EL	EDIFICIO PROPRIETA' COMUNALE	6,0	648					202
10.15	PU	HVAC	IMPIANTI SPORTIVI		8.398					2.620
10.16	PU	EL	EDIFICIO PROPRIETA' COMUNALE	1,5	0					
10.17	PU	EL	EDIFICIO PROPRIETA' COMUNALE	3,0	0					
10.18	PU	EL + HVAC	SEDE DELL'UNIONE COMUNI MONVISO	15,0	24.775					7.730
10.19	PU	EL + HVAC	PORTA DI VALLE	15,0	120.175					37.495
10.A	PU	EL	ILLUMINAZIONE PUBBLICA		330.725					103.186
10.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		1.930.634					602.358
10.C	PR	EL	EDIFICI RESIDENZIALI		3.033.936					946.588
10.D	PR	EL	AGRICOLTURA		107.259					33.465
10.E	PR	EL	INDUSTRIE		6.845.330					2.135.743

1.10.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY					
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER	FUEL CONSUMPTION	ENERGY CONSUMED	
						<i>kW<sub>p</sub></i>	<i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	<i>kWh<sub>th</sub>/year</i>	
10.1	PU	EL	MUNICIPIO						
10.2	PU	EL	MUNICIPIO						
10.3	PU	EL	MUNICIPIO						
10.4	PU	EL	SCUOLA SECONDARIA						
10.5	PU	EL + HVAC	SCUOLA PRIMARIA	GAS NATURALE			25.305 <i>Sm<sup>3</sup>/year</i>	238.912	48.260
10.6	PU	HVAC	SCUOLA MATERNA	GAS NATURALE			7.259 <i>Sm<sup>3</sup>/year</i>	68.534	13.844
10.7	PU	EL	EDIFICIO PROPRIETA' COMUNALE						
10.8	PU	EL	EDIFICIO PROPRIETA' COMUNALE						
10.9	PU	EL	EDIFICIO PROPRIETA' COMUNALE						
10.10	PU	EL	EDIFICIO PROPRIETA' COMUNALE						
10.11	PU	EL	EDIFICIO PROPRIETA' COMUNALE						
10.12	PU	EL	EDIFICIO PROPRIETA' COMUNALE						
10.13	PU	EL	EDIFICIO PROPRIETA' COMUNALE						
10.14	PU	EL	EDIFICIO PROPRIETA' COMUNALE						

10.15	PU	HVAC	IMPIANTI SPORTIVI	GAS NATURALE			928	Sm <sup>3</sup> /year	8.762	1.770
10.16	PU	EL	EDIFICIO PROPRIETA' COMUNALE							
10.17	PU	EL	EDIFICIO PROPRIETA' COMUNALE							
10.18	PU	EL + HVAC	SEDE DELL'UNIONE COMUNI MONVISO	GAS NATURALE		70	5.502	Sm <sup>3</sup> /year	51.946	10.493
10.A	PU	EL	ILLUMINAZIONE PUBBLICA							
10.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)							
10.C	PR	EL	EDIFICI RESIDENZIALI							
10.D	PR	EL	AGRICOLTURA							
10.E	PR	EL	INDUSTRIE							
10.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					4.091.990	495.131
	PR	HVAC		GAS NATURALE					6.518.241	1.316.685
	PR	HVAC		GASOLIO					4.047.144	1.080.588
	PR	HVAC		GPL					605.244	137.390
	PR	HVAC		SOLARE TERMICO					37.610	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	5.597.427					1.746.397
	PR	HVAC		TLR BIOMASSA					0	
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC						
	PR	HVAC		EOLICO HVAC						

## 1.11. COMUNE DI PAGNO

### 1.11.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				$kW_p$	$kWh_{el}/year$			$kW_p$	$kWh_{el}/year$	$kgCO_2/year$
11.1	PU	EL + HVAC	MUNICIPIO	10,0	9.085					2.835
11.2	PU	EL	MUNICIPIO 2	3,0	5.525					1.724
11.3	PU	EL + HVAC	EDIFICIO PROPRIETA' COMUNALE	30,0	5.865					1.830
11.A	PU	EL	ILLUMINAZIONE PUBBLICA		81.266					25.355
11.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		194.991					60.837
11.C	PR	EL	EDIFICI RESIDENZIALI		629.002					196.249
11.D	PR	EL	AGRICOLTURA		154.398					48.172
11.E	PR	EL	INDUSTRIE		21.516					6.713

1.11.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY	
					<i>kWh<sub>el</sub>/year</i>	INSTALLED POWER	FUEL CONSUMPTION	ENERGY CONSUMED		<i>kgCO<sub>2</sub>/year</i>
						<i>kW<sub>p</sub></i>	<i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	<i>kWh<sub>th</sub>/year</i>		
11.1	PU	EL + HVAC	MUNICIPIO	GAS NATURALE			5.613	<i>Sm<sup>3</sup>/year</i>	52.994	10.705
11.2	PU	EL	MUNICIPIO 2							
11.3	PU	EL + HVAC	EDIFICIO PROPRIETA' COMUNALE	GAS NATURALE			7.186	<i>Sm<sup>3</sup>/year</i>	67.845	13.705
11.A	PU	EL	ILLUMINAZIONE PUBBLICA							
11.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)							
11.C	PR	EL	EDIFICI RESIDENZIALI							
11.D	PR	EL	AGRICOLTURA							
11.E	PR	EL	INDUSTRIE							
11.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					720.300	87.156
	PR	HVAC		GAS NATURALE					1.824.516	368.552
	PR	HVAC		GASOLIO					172.981	46.186
	PR	HVAC		GPL					127.576	28.960
	PR	HVAC		SOLARE TERMICO					5.691	

	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	400.996					125.111
	PR	HVAC		TLR BIOMASSA					0	
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC						
	PR	HVAC		EOLICO HVAC						



## 1.12. COMUNE DI REVELLO

### 1.12.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>			<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>	
12.1	PU	EL	SCUOLE ELEMENTARI	15,0	13.694					4.273
12.2	PU	EL	SCUOLE MEDIE	15,0	23.067					7.197
12.3	PU	EL	ISOLA ECOLOGICA	1,5	582					182
12.4	PU	EL	SCALETTE	1,5	32					10
12.5	PU	EL	ALTRI USI	1,5	728					227
12.6	PU	EL	CANTIERE	15,0	0					
12.7	PU	EL	SEDE PROTEZIONE CIVILE	3,0	688					215
12.8	PU	EL	SEDE CIVICA	15,0	21.075					6.575
12.9	PU	EL	CAMPANILE	3,0	3.599					1.123
12.10	PU	EL	COLONIA	3,0	16					5
12.11	PU	EL	CENTRO ANZIANI	3,0	0					
12.12	PU	EL	MERCATO	27,5	3.764					1.174
12.13	PU	EL	BOCCIODROMO	10,0	6.903					2.154
12.14	PU	EL	CIMITERO STAFFARDA	1,5	179					56
12.15	PU	EL	CIMITERO CAPOLUOGO	1,5	3.906					1.219
12.16	PU	EL	IMPIANTI SPORTIVI	53,0	17.741					5.535
12.17	PU	EL	CAMPO CALCIO S. FIRMINO	1,5	0					
12.18	PU	EL	ALTRI USI	10,0	828					258
12.19	PU	EL	ALTRI USI	6,0	3.133					977
12.20	PU	EL	SCUOLA MATERNA	15,0	23.908					7.459

12.A	PU	EL	ILLUMINAZIONE PUBBLICA		332.389					103.705
12.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		3.007.551					938.356
12.C	PR	EL	EDIFICI RESIDENZIALI		4.099.458					1.279.031
12.D	PR	EL	AGRICOLTURA		3.807.748					1.188.017
12.E	PR	EL	INDUSTRIE		3.442.989					1.074.213

1.12.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC <i>kWh<sub>el</sub>/year</i>	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY <i>kgCO<sub>2</sub>/year</i>	
						INSTALLED POWER <i>kW<sub>p</sub></i>	FUEL CONSUMPTION <i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	ENERGY CONSUMED <i>kWh<sub>th</sub>/year</i>		
12.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					4.226.771	511.439
	PR	HVAC		GAS NATURALE					12.706.980	2.566.810
	PR	HVAC		GASOLIO					5.073.710	1.354.681
	PR	HVAC		GPL					1.771.020	402.021
	PR	HVAC		SOLARE TERMICO					94.752	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	3.583.177					1.117.951
	PR	HVAC		TLR BIOMASSA					37.239	3.001
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC	33.111					
	PR	HVAC		EOLICO HVAC						

## 1.13. COMUNE DI RIFREDDO

### 1.13.1. ELECTRIC ENERGY

For the municipality of Rifreddo it was not possible to find the consumption data of public buildings and private buildings with the method from real bills as the municipality is no longer part of the Unione Monviso.

The data were then determined by multiplying the number of inhabitants of the municipality by a pro-understanding consumption of 4 MWh/year.

This value is the result of an average consumption per inhabitant in the project area relating to municipalities similar to Rifreddo.

1.13.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC <i>kWh<sub>el</sub>/year</i>	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY <i>kgCO<sub>2</sub>/year</i>	
						INSTALLED POWER <i>kW<sub>p</sub></i>	FUEL CONSUMPTION <i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	ENERGY CONSUMED <i>kWh<sub>th</sub>/year</i>		
13.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE				697.671	84.418	
	PR	HVAC		GAS NATURALE				2.347.550	474.205	
	PR	HVAC		GASOLIO				815.698	217.791	
	PR	HVAC		GPL				271.169	61.555	
	PR	HVAC		SOLARE TERMICO				6.384		
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	1.470.153				458.688	
	PR	HVAC		TLR BIOMASSA				0		
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC	1.274					
	PR	HVAC		EOLICO HVAC						

## 1.14. COMUNE DI SANFRONT

### 1.14.1. ELECTRIC ENERGY

GENERAL DATA				ELECTRIC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	CONSUMPTION		PRODUCTION				EMISSIONS ELECTRIC ENERGY
				POWER TO THE METER	ENERGY CONSUMED	ENERGY SOURCE	ENERGY SOURCE	INSTALLED POWER	ENERGY GENERATED	
				<i>kW<sub>p</sub></i>	<i>kWh<sub>el</sub>/year</i>					
14.1	PU	EL	MUSEO BALMA BOVES	3,0	853					266
14.2	PU	EL + HVAC	MUNICIPIO	3,0	9.070					2.830
14.3	PU	EL + HVAC	SEDE ALPINI	3,0	3.413					1.065
14.4	PU	EL + HVAC	SCUOLA CAP	6,0	36.948					11.528
14.5	PU	EL + HVAC	AREA ARTIGINALE (ANTINCENDIO)	1,5	82					26
14.6	PU	EL	IMPIANTI SPORTIVI	6,0	16.782					5.236
14.7	PU	EL	DISSUASORE	1,5	26					8
14.8	PU	EL	CHIESA FRAZIONALE E GIOCO BOCCE	1,5	588					184
14.9	PU	EL	PESO E SEMAFORO	1,5	676					211
14.10	PU	EL + HVAC	EX ASILO	3,0	4.001					1.248
14.11	PU	EL	CIMITERO CAP.	3,0	2.953					921
14.12	PU	EL + HVAC	EX CINEMA	3,0	1.500					468

14.13	PU	EL + HVAC	CENTRO SOCIALE	3,0	0					
14.14	PU	EL	MAGAZZINO COMUNALE	3,0	9.690					3.023
14.15	PU	EL	CIMITERO ROCCHETTA	3,0	122					38
14.A	PU	EL	ILLUMINAZIONE PUBBLICA		138.130					43.097
14.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)		1.385.934					432.411
14.C	PR	EL	EDIFICI RESIDENZIALI		2.337.310					729.241
14.D	PR	EL	AGRICOLTURA		451.245					140.788
14.E	PR	EL	INDUSTRIE		1.986.313					619.730

1.14.2. HVAC ENERGY

GENERAL DATA				HVAC ENERGY						
PROGRESSION OF THE BUILDINGS	PROPERTIES	TYPE OF USERS	BUILDING / PLANT	FUEL / ENERGY SOURCE	ELECTRICITY CONSUMPTION FOR HVAC <i>kWh<sub>el</sub>/year</i>	THERMAL ENERGY CONSUMPTION FOR HVAC			EMISSION HVAC ENERGY <i>kgCO<sub>2</sub>/year</i>	
						INSTALLED POWER <i>kW<sub>p</sub></i>	FUEL CONSUMPTION <i>litres/year - Sm<sup>3</sup>/year - kg/year</i>	ENERGY CONSUMED <i>kWh<sub>th</sub>/year</i>		
14.1	PU	EL	MUSEO BALMA BOVES							
14.2	PU	EL + HVAC	MUNICIPIO	GAS NATURALE		57	7.300	<i>Sm<sup>3</sup>/year</i>	68.921	13.922
14.3	PU	EL + HVAC	SEDE ALPINI	GAS NATURALE						
14.4	PU	EL + HVAC	SCUOLA CAP	GASOLIO		414	78.947	<i>litres/year</i>	796.536	212.675
14.5	PU	EL + HVAC	AREA ARTIGINALE (ANTINCENDIO)	GPL		24	6.767	<i>litres/year</i>	45.076	10.232
14.6	PU	EL	IMPIANTI SPORTIVI							
14.7	PU	EL	DISSUASORE							
14.8	PU	EL	CHIESA FRAZIONALE E GIOCO BOCCE							
14.9	PU	EL	PESO E SEMAFORO							
14.10	PU	EL + HVAC	EX ASILO	GAS NATURALE		88	4.459	<i>Sm<sup>3</sup>/year</i>	42.099	8.504
14.11	PU	EL	CIMITERO CAP.							
14.12	PU	EL + HVAC	EX CINEMA	GAS NATURALE		29	1.311	<i>Sm<sup>3</sup>/year</i>	12.378	2.500
14.13	PU	EL + HVAC	CENTRO SOCIALE	GAS NATURALE		27	500	<i>Sm<sup>3</sup>/year</i>	4.721	954
14.14	PU	EL	MAGAZZINO COMUNALE							



14.15	PU	EL	CIMITERO ROCCHETTA							
14.A	PU	EL	ILLUMINAZIONE PUBBLICA							
14.B	PR	EL	EDIFICI, ATTREZZATURE/IMPIANTI TERZIARI (NON COMUNALI)							
14.C	PR	EL	EDIFICI RESIDENZIALI							
14.D	PR	EL	AGRICOLTURA							
14.E	PR	EL	INDUSTRIE							
14.F	PR	HVAC	EDIFICI RESIDENZIALI + TERZIARIO + INDUSTRIE + AGRICOLTURA	BIOMASSE SOLIDE					1.231.464	149.007
	PR	HVAC		GAS NATURALE					6.024.463	1.216.941
	PR	HVAC		GASOLIO					2.169.507	579.258
	PR	HVAC		GPL					674.020	153.002
	PR	HVAC		SOLARE TERMICO					30.536	
	PR	HVAC		HVAC EN. EL. (POMPE DI CALORE)	3.844.616					1.199.520
	PR	HVAC		TLR BIOMASSA					0	
	PR	HVAC		TLR GAS NATURALE						
	PR	HVAC		FOTOVOLTAICO HVAC	99.268					
	PR	HVAC		EOLICO HVAC						