

OVERALL STRATEGY

Mandatory fields

1) OVERALL CO2 EMISSION REDUCTION TARGET BY 2020

Absolute reduction	or	Per capita reduction
20%		20%
25%		32%

Please select the corresponding box

2) LONG-TERM VISION OF YOUR LOCAL AUTHORITY (please include priority areas, main trends and challenges)

As a vision for the future, the energy policy is orientated to guarantee security of energy supply, ensure economical and environmental sustainability of the sector and quality of energy services, and to contribute to job creation and regional added value and to the competitiveness of the regional economy.

The specific main objectives of the strategy for sustainable energy are to:

- Improve energy supply guarantee.
- Reduce energy dependence from abroad.
- Reduce energy intensity in Gross Domestic Product.
- Reduce carbon dioxide emissions.

The targets to achieve in 2020 are to:

- Increase by 20% the number of days of autonomous storage of primary energy compared to 2005.
- Increase to 20% the use of regional energy resources in primary energy demand.
- Increase to 50% the use of regional energy resources in electricity production.
- Reduce by 20% the energy intensity in Gross Domestic Product (primary energy/Gross Domestic Product) compared to 2005.
- Reduce CO2 by 20% compared to 2005.

3) ORGANISATIONAL AND FINANCIAL ASPECTS

Coordination and organisational structures created/assigned	<p>Steering Committee:</p> <ul style="list-style-type: none"> - Vice-Presidency of the Regional Government; - Regional Directorate of Commerce, Industry and Energy; - Empresa de Electricidade da Madeira, S.A. (electricity company); - AREAM – Agência Regional da Energia e Ambiente da Região Autónoma da Madeira (regional energy agency). <p>Advisory Committee: constituted by representatives of stakeholders.</p>
Staff capacity allocated	<p>Coordination: Vice-Presidency of the Regional Government; Regional Directorate of Commerce, Industry and Energy; Empresa de Electricidade da Madeira, S.A.; AREAM – Agência Regional da Energia e Ambiente da Região Autónoma da Madeira.</p> <p>Technical staff: Empresa de Electricidade da Madeira, S.A.; AREAM – Agência Regional da Energia e Ambiente da Região Autónoma da Madeira; promoters; energy service companies; consultants; builders; etc.</p>

Involvement of stakeholders and citizens	<p>To catalyse the involvement of stakeholders, periodic meetings with the Advisory Committee will be held, comprising representatives from various sectors of society with a say or interest in the energy area, in order to inform on the actions and the progress of the plan's implementation, identify existing or possible constraints and analyse measures to optimize the results and correct possible deviations.</p> <p>To reach a wider public, the media will be used, to date with events, forums and publications, to disseminate information on the actions that constitutes the plan and on the benefits and incentives, raising awareness to the importance of these actions, in the context of regional development and the improvement of quality of the environment.</p>
Overall estimated budget	884 million euros until 2020 - 31,1% citizens; 33,1% public companies; 32,8% private companies and organizations; 2,3% Regional Government; 0,7% Municipalities.
Foreseen financing sources for the investments within your action plan	<p>The financing sources are:</p> <ul style="list-style-type: none"> - Regional Budget. - Municipal Budget. - Own funds. - European Investment Bank. - Bank loan. - Energy Service Companies (ESCO). - Public-private partnerships. <p>The support instruments are:</p> <ul style="list-style-type: none"> - Operational Programmes (Intervir+ e Rumos). - Incentive Systems (Qualificar+, SI Turismo, etc.). - European programmes. - Energy Efficiency Fund. - Tax benefits. - Special tariffs.
Planned measures for monitoring and follow up	<p>For monitoring, data will be collected periodically regarding final energy demand, secondary energy production, use of renewable energy and state of implementation of sustainable energy actions.</p> <p>Based on the information gathered, AREAM will prepare an energy balance and an emissions inventory, to verify the progress of the indicators in relation to the objectives and targets set, in order to evaluate the results of the actions implemented.</p> <p>The Advisory Committee analyses the indicators concerning the objectives and targets and the progress of the actions, and meet every two years, to discuss the results and the solutions to optimize the implementation of the Sustainable Energy Action Plan.</p>

Go to the next sheet dedicated to your Baseline Emission Inventory

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Island Sustainable Energy Action Plan (ISEAP)

www.islepact.eu

Island Madeira

Inventory year 2009

BASELINE EMISSION INVENTORY

Mandatory fields

1) GENERAL DATA

Number of inhabitants 262 456 (2009)

CO2 calculation method IPCC emission factors

2) RESULTS OF ENERGY BALANCE

FINAL ENERGY DEMAND

[MWh]

DEMAND SECTOR		ENERGY FOR FINAL USE																		TOTAL
		Centralized energy services				Fossil fuels						Renewable energy sources (excluding electricity and heat sold to public networks)								
Sector description	Electricity from public grid	Heat from district heating	Cold from district cooling	Subtotal	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Subtotal		
RESIDENTIAL	259 265			259 265				202 603			202 603			24 683			55 191	79 874	541 742	
Hot water	27 970			27 970				118 309			118 309			24 683			6 724	31 407	177 686	
Heating and cooling	16 610			16 610				8 759			8 759						41 273	41 273	66 642	
Lighting	57 751			57 751															57 751	
Cooking	21 488			21 488				75 535			75 535						7 194	7 194	104 217	
Refrigerator and freezers	42 871			42 871															42 871	
Laundry machines and dryers	22 143			22 143															22 143	
Dish washing	9 366			9 366															9 366	
Tv sets	32 515			32 515															32 515	
Other electric appliances	28 551			28 551															28 551	
PRIMARY SECTOR	11 108			11 108		17 488		3 438			20 926								32 094	
Agriculture, forestry and fishing	6 413			6 413		10 465		3 438			13 903								20 316	
Mining and quarrying	4 696			4 696		7 023					7 023								11 719	
SECONDARY SECTOR	79 972	11 192		91 164	23 121	10 335		8 232			41 688						5 058	5 058	137 910	
Manufacturing	47 958	11 192		59 150	18 520	1 111		7 357			26 988						5 058	5 058	91 196	
Water supply, sewerage, waste management and remediation activities	18 039			18 039		693					693								18 732	
Construction	13 975			13 975	4 601	8 531		875			14 007								27 982	
TERTIARY SECTOR	492 557			492 557	12 097	9 832	2 820	125 918			150 667			2 303			1 686	3 989	647 213	
Wholesale and retail trade; repair of motor vehicles and motorcycles	115 459			115 459															115 459	
Accommodation and food service activities	150 856			150 856	1 614	3 912		93 673			99 199			1 330			1 686	3 016	253 071	
General public administration and social security	33 853			33 853				10 456			10 456								44 309	
Defence, justice, police and fire departments	1 364			1 364	1 132			640			1 772								3 136	
Education	9 788			9 788				2 161			2 161			189				189	12 137	
Human health and social work activities	12 902			12 902	8 479	210		8 134			16 823			530				530	30 255	
Other services	87 477			87 477	872	5 710	2 820	10 854			20 256			254				254	107 987	
Public lighting	80 859			80 859															80 859	
TRANSPORTS	22			22		1 151 345	503 455				1 654 800								1 654 822	
Passenger road transport (public transports, taxi, tourism, school buses, etc.)	22			22		94 250					94 250								94 272	
Freight transport by road and removal services						101 126					101 126								101 126	
Other fleet for public and private services						37 491	12 651				50 142								50 142	
Private transports						918 478	490 804				1 409 282								1 409 282	
TOTAL FOR INTERNAL MARKET	842 924	11 192		854 116	35 218	1 189 000	506 275	340 191			2 070 684			26 986			61 935	88 921	3 013 722	
Reexportation (ships, airplanes, industrial free zones, national and international militar installations, etc.)																				
Activities with intensive use of energy for exportation (to exclude in the island energy balance)																				
Other (to exclude in the island energy balance)																				
TOTAL	842 924	11 192		854 116	35 218	1 189 000	506 275	340 191			2 070 684			26 986			61 935	88 921	3 013 722	

SECONDARY ENERGY PRODUCTION AND ENERGY FLUXES

[MWh]

PRODUCTION SECTOR		ENERGY SOURCE															SECONDARY ENERGY CONVERSION			ENERGY FLUXES						TOTAL	Distribution losses and self-consumption
		Fossil fuels						Renewable energy sources (from systems connected to public networks)									Subtotal	Electricity conversion to cold	Heat conversion to cold	Subtotal	Storage		External connection		Reexportation and external consumption		
Energy product	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal					Input to storage	Output from storage	Import to island	Export from island			
Electricity	708 238	4 009					712 247	139 639	36 905	289				36 512		213 345	925 592	1 051	736					-315	925 276	82 352	
Heat															11 192	11 192	11 192								11 192		
Cold																											
TOTAL	708 238	4 009					712 247	139 639	36 905	289				36 512	11 192	224 537	936 784	1 051	736					-315	936 468	82 352	

PRIMARY ENERGY CONVERTED TO SECONDARY ENERGY (primary energy consumption)

[MWh]

PRODUCTION SECTOR	PRIMARY ENERGY SOURCE																	Conversion losses from primary to secondary energy
	Fossil fuels							Renewable energy sources							Subtotal		TOTAL	
Energy product	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal	TOTAL	
Electricity	1 718 129	9 727					1 727 856	139 639	36 905	289				36 512		213 345	1 941 201	1 015 609
Heat																		-11 192
Cold																		
TOTAL	1 718 129	9 727					1 727 856	139 639	36 905	289				36 512		213 345	1 941 201	1 004 417

PRIMARY ENERGY DEMAND

[MWh]

Energy product	PRIMARY ENERGY SOURCE																						
	Fossil fuels							Renewable energy sources									Electricity				Heat	Cold	TOTAL
	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal	Imported electricity (cable)	Exported electricity (cable)	Reexportation and external consumption	Subtotal	Reexportation and external consumption	Reexportation and external consumption	
TOTAL	1 753 347	1 198 727	506 275	340 191			3 798 540	139 639	36 905	27 275			61 935	36 512		302 266						4 100 806	

ENERGY CONVERSION EFFICIENCY

[%]

PRODUCTION SECTOR	PRIMARY ENERGY SOURCE																
	Fossil fuels							Renewable energy sources							TOTAL		
Energy product	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste		Energy recovery	Subtotal
Electricity	41%	41%	-	-	-	-	41%	100%	100%	100%	-	-	-	100%	-	100%	48%
Heat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cold	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

3) RESULTS OF EMISSION INVENTORY

CO2 EMISSIONS FROM FINAL USE

[t CO2]

DEMAND SECTOR	ENERGY FOR FINAL USE																		
	Centralized energy services				Fossil fuels							Renewable energy sources (excluding electricity and heat sold to public networks)							TOTAL
Sector description	Electricity from public grid	Heat from district heating	Cold from district cooling	Subtotal	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Subtotal	
RESIDENTIAL	149 421			149 421							48 625				48 625				198 046
Hot water	16 120			16 120							28 394				28 394				44 514
Heating and cooling	9 573			9 573							2 102				2 102				11 675
Lighting	33 283			33 283															33 283
Cooking	12 384			12 384							18 128				18 128				30 512
Refrigerator and freezers	24 708			24 708															24 708
Laundry machines and dryers	12 762			12 762															12 762
Dish washing	5 398			5 398															5 398
Tv sets	18 739			18 739															18 739
Other electric appliances	16 455			16 455															16 455
PRIMARY SECTOR	6 402			6 402		4 669		825			5 494								11 896
Agriculture, forestry and fishing	3 696			3 696		2 794		825			3 619								7 315
Mining and quarrying	2 706			2 706		1 875					1 875								4 581
SECONDARY SECTOR	46 090			46 090	6 451	2 759		1 976			11 186								57 276
Manufacturing	27 639			27 639	5 167	297		1 766			7 229								34 869
Water supply, sewerage, waste management and remediation activities	10 396			10 396		185					185								10 581
Construction	8 054			8 054	1 284	2 278		210			3 771								11 825
TERTIARY SECTOR	283 873			283 873	3 375	2 625	702	30 220			36 923								320 796
Wholesale and retail trade; repair of motor vehicles and motorcycles	66 542			66 542															66 542
Accommodation and food service activities	86 942			86 942	450	1 045		22 482			23 976								110 918
General public administration and social security	19 510			19 510				2 509			2 509								22 020
Defence, justice, police and fire departments	786			786	316			154			469								1 255
Education	5 641			5 641				519			519								6 159
Human health and social work activities	7 436			7 436	2 366	56		1 952			4 374								11 810
Other services	50 415			50 415	243	1 525	702	2 605			5 075								55 490
Public lighting	46 601			46 601															46 601
TRANSPORTS	13			13		307 409	125 360				432 769								432 782
Passenger road transport (public transports, taxi, tourism, school buses, etc.)	13			13		25 165					25 165								25 178
Freight transport by road and removal services						27 001					27 001								27 001
Other fleet for public and private services						10 010	3 150				13 160								13 160
Private transports						245 234	122 210				367 444								367 444
TOTAL FOR INTERNAL MARKET	485 799			485 799	9 826	317 463	126 062	81 646			534 997								1 020 796

CO2 EMISSIONS FROM PRODUCTION

[t CO2]

PRODUCTION SECTOR	PRIMARY ENERGY SOURCE																
	Fossil fuels							Renewable energy sources									TOTAL
Energy product	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal	
Electricity	479358	2597					481 955							3844		3 844	485 799
Heat																	
Cold																	
TOTAL	479 358	2 597					481 955							3 844		3 844	485 799

[t CO2/MWh]

Energy product	CO2 EMISSION FACTORS
Electricity	0,525
Heat	
Cold	

CO2 EMISSIONS

[t CO2]

Energy product	PRIMARY ENERGY SOURCE																						
	Fossil fuels							Renewable energy sources								Electricity				Heat		Cold	TOTAL
	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal	Imported electricity (cable)	Exported electricity (cable)	Reexportation and external consumption	Subtotal	Reexportation and external consumption		
TOTAL	489 184	320 060	126 062	81 646			1 016 952								3 844	3 844							

[t CO2]

CO2 emissions from ETS installations included in the calculations for final use of energy	CO2 emissions from ETS installations included in the calculations for secondary energy production

Go to the next sheet dedicated to your Emission Inventory in 2020

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PLAN EMISSION INVENTORY IN 2020 (implementing sustainable energy actions)

1) GENERAL DATA

Number of inhabitants 287 044 (2020)

CO2 calculation method IPCC emission factors

2) RESULTS OF ENERGY BALANCE

FINAL ENERGY DEMAND

[MWh]

DEMAND SECTOR	ENERGY FOR FINAL USE																		TOTAL
	Centralized energy services				Fossil fuels							Renewable energy sources (excluding electricity and heat sold to public networks)							
Sector description	Electricity from public grid	Heat from district heating	Cold from district cooling	Subtotal	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Subtotal	
RESIDENTIAL	277 640			277 640				164 301			164 301			71 280			26 739	98 019	539 960
Hot water	22 839			22 839				82 769			82 769			71 280			2 687	73 967	179 574
Heating and cooling	16 913			16 913				7 112			7 112						21 177	21 177	45 202
Lighting	59 051			59 051															59 051
Cooking	30 115			30 115				74 420			74 420						2 875	2 875	107 410
Refrigerator and freezers	46 704			46 704															46 704
Laundry machines and dryers	25 290			25 290															25 290
Dish washing	10 203			10 203															10 203
Tv sets	35 422			35 422															35 422
Other electric appliances	31 104			31 104															31 104
PRIMARY SECTOR	13 172			13 172		20 738		4 077			24 815								37 987
Agriculture, forestry and fishing	7 604			7 604		12 410		4 077			16 487								24 091
Mining and quarrying	5 568			5 568		8 328					8 328								13 896
SECONDARY SECTOR	75 568	15 141		90 709	12 901	10 204		5 979			29 084			2 261			4 391	6 652	126 445
Manufacturing	40 612	15 141		55 753	8 343	941		5 112			14 395			2 261			4 391	6 652	76 800
Water supply, sewerage, waste management and remediation activities	21 110			21 110		811					811								21 921
Construction	13 846			13 846	4 559	8 452		867			13 878								27 724
TERTIARY SECTOR	631 557			631 557	10 308	13 333	4 341	129 634			157 616			23 517			2 316	25 834	815 006
Wholesale and retail trade; repair of motor vehicles and motorcycles	168 235			168 235															168 235
Accommodation and food service activities	179 804			179 804	1 616	4 355		96 707			102 677			16 724			2 316	19 040	301 522
General public administration and social security	30 440			30 440				9 402			9 402								39 842
Defence, justice, police and fire departments	1 226			1 226	1 018			575			1 593								2 820
Education	7 078			7 078				220			220			3 418				3 418	10 716
Human health and social work activities	11 601			11 601	6 332	189		6 022			12 543			2 984				2 984	27 128
Other services	127 470			127 470	1 342	8 790	4 341	16 708			31 180			391				391	159 041
Public lighting	105 703			105 703															105 703
TRANSPORTS	2 074			2 074		959 752	417 265				1 377 017						5 106	5 106	1 384 197
Passenger road transport (public transports, taxi, tourism, school buses, etc.)	466			466		72 508					72 508						5 106	5 106	78 080
Freight transport by road and removal services						94 111					94 111								94 111
Other fleet for public and private services	146			146		34 277	11 773				46 050								46 196
Private transports	1 461			1 461		758 857	405 492				1 164 349								1 165 810
TOTAL FOR INTERNAL MARKET	1 000 012	15 141		1 015 152	23 209	1 004 028	421 606	303 990			1 752 833			97 058			38 552	135 611	2 903 596
Reexportation (ships, airplanes, industrial free zones, national and international militar installations, etc.)																			
Activities with intensive use of energy for exportation (to exclude in the island energy balance)																			
Other (to exclude in the island energy balance)																			
TOTAL	1 000 012	15 141		1 015 152	23 209	1 004 028	421 606	303 990			1 752 833			97 058			38 552	135 611	2 903 596

SECONDARY ENERGY PRODUCTION AND ENERGY FLUXES

[MWh]

PRODUCTION SECTOR	ENERGY SOURCE																SECONDARY ENERGY CONVERSION			ENERGY FLUXES						TOTAL	Distribution losses and self-consumption
	Fossil fuels						Renewable energy sources (from systems connected to public networks)										Subtotal	Electricity conversion to cold	Heat conversion to cold	Subtotal	Storage		External connection		Reexportation and external consumption		
Energy product	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal					Input to storage	Output from storage	Import to island	Export from island			
Electricity	235 313	4 009			300 000		539 323	194 389	186 701	30 949	12 600	13 140	64 800	36 512		539 091	1 078 414			44 107	30 875			-13 232	1 065 182	65 170	
Heat															15 141	15 141									15 141		
Cold																											
TOTAL	235 313	4 009			300 000		539 323	194 389	186 701	30 949	12 600	13 140	64 800	36 512	15 141	554 231	1 093 554			44 107	30 875			-13 232	1 080 322	65 170	

PRIMARY ENERGY CONVERTED TO SECONDARY ENERGY (primary energy consumption)

[MWh]

PRODUCTION SECTOR	PRIMARY ENERGY SOURCE																	Conversion losses from primary to secondary energy
	Fossil fuels							Renewable energy sources										
Energy product	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal		
Electricity	570 852	9 727			714 286		1 294 865	194 389	186 701	30 949	12 600	13 140	162 000	36 512		636 291	1 931 155	852 742
Heat																		-15 141
Cold																		
TOTAL	570 852	9 727			714 286		1 294 865	194 389	186 701	30 949	12 600	13 140	162 000	36 512		636 291	1 931 155	837 601

PRIMARY ENERGY DEMAND

[MWh]

Energy product	PRIMARY ENERGY SOURCE																						
	Fossil fuels							Renewable energy sources									Electricity				Heat	Cold	TOTAL
	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal	Imported electricity (cable)	Exported electricity (cable)	Reexportation and external consumption	Subtotal	Reexportation and external consumption	Reexportation and external consumption	
TOTAL	594 061	1 013 754	421 606	303 990	714 286		3 047 698	194 389	186 701	128 008	12 600	13 140	200 552	36 512		771 902						3 819 599	

ENERGY CONVERSION EFFICIENCY

[%]

PRODUCTION SECTOR		PRIMARY ENERGY SOURCE															
		Fossil fuels						Renewable energy sources									
Energy product	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal	TOTAL
Electricity	41%	41%	-	-	42%	-	42%	100%	100%	100%	100%	100%	40%	100%	-	85%	56%
Heat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cold	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

3) RESULTS OF EMISSION INVENTORY

CO2 EMISSIONS FROM FINAL USE

[t CO2]

DEMAND SECTOR	ENERGY FOR FINAL USE																		
	Centralized energy services				Fossil fuels							Renewable energy sources (excluding electricity and heat sold to public networks)							TOTAL
Sector description	Electricity from public grid	Heat from district heating	Cold from district cooling	Subtotal	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Subtotal	TOTAL
RESIDENTIAL	86 066			86 066							39 432								125 498
Hot water	7 080			7 080							19 864								26 944
Heating and cooling	5 243			5 243							1 707								6 950
Lighting	18 305			18 305															18 305
Cooking	9 335			9 335							17 861								27 196
Refrigerator and freezers	14 478			14 478															14 478
Laundry machines and dryers	7 840			7 840															7 840
Dish washing	3 163			3 163															3 163
Tv sets	10 980			10 980															10 980
Other electric appliances	9 642			9 642															9 642
PRIMARY SECTOR	4 083			4 083		5 537				978		6 515							10 599
Agriculture, forestry and fishing	2 357			2 357		3 313				978		4 292							6 649
Mining and quarrying	1 726			1 726		2 224						2 224							3 950
SECONDARY SECTOR	23 425			23 425	3 599	2 725				1 435		7 759							31 184
Manufacturing	12 589			12 589	2 328	251				1 227		3 806							16 395
Water supply, sewerage, waste management and remediation activities	6 544			6 544		217						217							6 760
Construction	4 292			4 292	1 272	2 257				208		3 737							8 029
TERTIARY SECTOR	195 777			195 777	2 876	3 560	1 081			31 112		38 629							234 405
Wholesale and retail trade; repair of motor vehicles and motorcycles	52 151			52 151															52 151
Accommodation and food service activities	55 738			55 738	451	1 163				23 210		24 823							80 561
General public administration and social security	9 436			9 436						2 256		2 256							11 693
Defence, justice, police and fire departments	380			380	284					138		422							802
Education	2 194			2 194						53		53							2 247
Human health and social work activities	3 596			3 596	1 767	50				1 445		3 262							6 859
Other services	39 514			39 514	374	2 347	1 081		4 010			7 812							47 326
Public lighting	32 767			32 767															32 767
TRANSPORTS	643			643		256 254	103 899					360 153							360 796
Passenger road transport (public transports, taxi, tourism, school buses, etc.)	145			145		19 360						19 360							19 504
Freight transport by road and removal services						25 128						25 128							25 128
Other fleet for public and private services	45			45		9 152	2 932					12 083							12 129
Private transports	453			453		202 615	100 967					303 582							304 035
TOTAL FOR INTERNAL MARKET	309 994			309 994	6 475	268 075	104 980		72 958			452 488							762 482

CO2 EMISSIONS FROM PRODUCTION

[t CO2]

PRODUCTION SECTOR		PRIMARY ENERGY SOURCE															
		Fossil fuels						Renewable energy sources									TOTAL
Energy product	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal	
Electricity	159268	2597			144286		306 151							3844		3 844	309 994
Heat																	
Cold																	
TOTAL	159 268	2 597			144 286		306 151							3 844		3 844	309 994

[t CO2/MWh]	
Energy product	CO2 EMISSION FACTORS
Electricity	0,287
Heat	
Cold	

CO2 EMISSIONS

[t CO2]

Energy product	PRIMARY ENERGY SOURCE																					
	Fossil fuels							Renewable energy sources								Electricity				Heat	Cold	TOTAL
	Fueloil	Diesel	Gasoline	LPG	Natural gas	Coal	Subtotal	Hydro	Wind	Solar	Geothermal	Ocean	Biomass	Urban waste	Energy recovery	Subtotal	Imported electricity (cable)	Exported electricity (cable)	Reexportation and external consumption	Subtotal	Reexportation and external consumption	
TOTAL	165 743	270 672	104 980	72 958	144 286		758 639								3 844	3 844						

[t CO2]	
CO2 emissions from ETS installations included in the calculations for final use of energy	CO2 emissions from ETS installations included in the calculations for secondary energy production

Go to the next sheet dedicated to your Island Sustainable Energy Action Plan

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Mandatory fields

1) TITLE OF ISLAND SUSTAINABLE ENERGY ACTION PLAN

Island Sustainable Energy Action Plan of Madeira

Authority approving the plan Vice-Presidency of Regional Government of Madeira

Date of formal approval

2) KEY ELEMENTS OF ISLAND SUSTAINABLE ENERGY ACTION PLAN

SECTORS AND FIELDS OF ACTION	ACTIONS (one line per action - insert lines if necessary; exclude ETS actions)	RESPONSIBLE FOR IMPLEMENTATION	IMPLEMENTATION SCHEDULE		ESTIMATED INVESTMENT COSTS [euro]	EXPECTED ENERGY SAVINGS [MWh/year]	EXPECTED RENEWABLE ENERGY INCREASE [MWh/year]	EXPECTED CO2 REDUCTION [ton/year]	ENERGY SAVINGS TARGET IN 2020 [MWh/year]	RENEWABLE ENERGY INCREASE TARGET IN 2020 [MWh/year]	CO2 REDUCTION TARGET IN 2020 [ton/year]
			Starting year	Ending year							
RESIDENTIAL											
Hot water	1.1. Installation of solar collectors for water heating (domestic hot water, swimming pools and washing machines).	• Citizen • Companies	2012	2020	50 000 000	12 079	41 671	16 322	67 460	46 354	44 589
	1.2. Purchase of high performance equipment and adoption of more efficient behaviour	• Citizen	2012	2020	5 000 000	13 749		4 551			
Heating and cooling	1.3. Application of passive measures (thermal insulation in new and existing buildings, sunlight protection, natural ventilation) and adoption of more efficient behaviour.	• Citizen • Companies	2012	2020	150 000 000	4 331		2 463			
	1.4. Use of biomass products (wood bricks, pellets, etc.) for heating.	• Citizens	2016	2020	5 000 000	1 740	4 683	3 611			
Lighting	1.5. Installation of energy efficient lamps, lighting fixtures and control devices, and adoption of more efficient behaviour.	• Citizens	2012	2020	6 000 000	8 295		5 890			
	1.6. Campaigns to provide energy efficient lamps and control devices (light and movement sensors).	• EEM • AREAM • Citizen	2012	2015	2 000 000	1 756		1 246			
Cooking	1.7. Acquisition of high performance kitchen equipment and adoption of more efficient behaviour.	• Citizen	2012	2020	6 250 000	11 756		741			
Refrigerator and freezers	1.8. Acquisition of high performance refrigerators and freezers, and adoption of more efficient behaviour.	• Citizen	2012	2020	4 000 000	4 723		3 354			
Laundry machines and dryers	1.9. Acquisition of high performance laundry machines and dryers, use of solar heated water and adoption of more efficient behaviour.	• Citizen	2012	2020	500 000	1 272		902			
Dish washing	1.10. Acquisition of high performance dish washing machines, use of solar heated water and adoption of more efficient behaviour.	• Citizen	2012	2020		1 032		733			
Tv sets	1.11. Acquisition of televisions with less energy consumption and less use of stand-by mode.	• Citizen	2012	2020		3 582		2 543			
Other electric appliances	1.12. Acquisition of electrical appliances (computers, printers, router, sound, etc.) with less energy consumption and less use of stand-by mode.	• Citizen	2012	2020		3 145		2 233			
Overall actions											
PRIMARY SECTOR											
Agriculture, forestry and fishing											
Mining and quarrying											
Overall actions											
SECONDARY SECTOR											
Manufacturing	2.1. Use of renewable energy, waste heat recovery and other available local resources, installation of more efficient heat production and storage equipment, improvement in insulation of thermal piping, optimizing conditions of use and adoption of more efficient behaviour.	• Companies	2012	2020	3 700 000	2 364	2 261	1 292			

[illegible]

Cold (non-renewable)												
Hydro	5.2. Increase water retention and water storage capacity and the power installed of hydroelectric plants and reversible hydroelectric plants.	• EEM	2012	2020	120 000 000		54 750	36 331				
Wind	5.3. Installation of wind farms and micro-wind turbines in micro and mini production regimes.	• Companies • Citizen	2011	2020	54 000 000		149 796	99 948				
Solar	5.4. Installation of solar photovoltaic parks and solar photovoltaic kits in micro and mini production regimes.	• Companies • Citizen	2011	2020	53 654 000		30 660	20 480				
Geothermal	5.5. Installation of an induced geothermal pilot power plant.	• Companies	2018	2020	18 900 000		12 600	8 401				
Ocean	5.6. Installation of wave energy power plants.	• Companies	2018	2020	7 050 000		13 140	8 761				
Biomass	5.7. Installation of power plants for biomass from forest, agriculture and livestock farms.	• Companies	2013	2015	113 400 000		162 000	43 676				
	5.8. Production of solid, liquefied and gaseous biofuels from plants, agricultural biomass, from livestock farms and selected waste.	• Companies	2015	2020	1 500 000							
Urban waste												
Storage												
External connection												
Distribution losses and self-consumption	5.9. Renewal of infrastructures and equipment of electricity transmission and distribution networks.	• EEM	2012	2020	45 000 000	31 542		21 029				
Overall actions												
LAND USE PLANNING												
Regional and local strategic planning	6.1. Integration of criteria and norms in land use planning and municipal regulations that encourage the minimization of energy needs in transports and buildings.	• Regional Government • Municipalities	2012	2020								
	6.2. Implementation of a sustainable energy action plan for all municipalities, in the scope of the Covenant of Mayors.	• Municipalities	2012	2015	300 000							
Transports and mobility planning	6.3. Preparation of a mobility plan that covers traffic conditioning and parking in urban centre, and favours public transport, electric vehicles, bicycles and pedestrian circulation.	• Municipalities	2012	2015	550 000							
	6.4 Installation of charging infrastructures for electric vehicles.	• EEM • Municipalities • Companies	2012	2020	750 000							
Energy infrastructures planning	6.5. Installation of power stabilization systems to mitigate the disruptions in energy production from wind and solar photovoltaic in the electricity grid.	• EEM	2012	2015	8 000 000							
	6.6. Transfer of electricity consumption from peak to off-peak hours, through the accumulation of cold in hotels (ice banks), vehicle battery charging and changing hours of operation of consuming equipments, to maximize the share of intermittent renewable energy in the electricity grid.	• Companies • Citizen	2013	2020	1 800 000							
	6.7. Feasibility study on heat recovery from thermal power station in Victoria for hotels and industries, through a hot water network or through heat accumulation containers.	• EEM • AREAM	2012	2015	150 000							
Renewable energy land use planning	6.8. Assessment of the potential of renewable energy resources, development of forecasting models of intermittent renewable sources and study of dynamic behaviour of the electricity grid.	• Regional Government • AREAM • EEM	2012	2015	250 000							
	6.9. Land use planning of wind farms, photovoltaic and other renewable energy installations, based on the assessment of the potential of the resources, the dynamic behaviour of the electricity grid and the constraints in a territorial scope.	• Regional Government • Municipalities • AREAM • EEM	2014	2015	150 000							
Overall actions												
PUBLIC PROCUREMENT OF PRODUCTS AND SERVICES												
Energy efficiency requirements/standards	7.1. Definition of standards and criteria for energy efficiency in the specifications of tender documents for procurement of works, acquisition of goods and services.	• Regional Government • Municipalities • Companies	2012	2020								
Renewable energy requirements/standards	7.2. Definition of standards and criteria for use of renewable energy in the specifications of tender documents for procurement of works, acquisition of goods and services.	• Regional Government • Municipalities • Companies	2012	2020								
Overall actions												
CITIZENS AND STAKEHOLDERS												
Advisory services	8.1. Creation of an information helpline and a forum with questions and answers, based on an e-learning platform, for domestic energy users, in order to clarify doubts and provide advice on energy efficiency, use of renewable energy and reduction of CO2 emissions	• Regional Government • AREAM	2012	2020	347 700							
	8.2. Financial support for public promoters and non-profit organizations to implement the actions of the Sustainable Energy Action Plan.	• IDR	2012	2020								
									31 542	422 946	296 509	

Financial support and grants	8.3. Financial incentive for business promoters to implement voluntary energy efficiency measures, use of renewable energy for own consumption, sustainable mobility and reduction of CO2 emissions.	• IDE-RAM	2012	2020							
	8.4. Financial incentive for residential promoters to implement voluntary of energy efficiency measures, use of renewable energy for own consumption and reduction of CO2 emissions.	• Regional Government	2013	2020							
	8.5. Reduction of public parking fees for electric vehicles.	• Municipalities	2012	2015							
	8.6. Promotion and support in the preparation and negotiation of energy service contracts and specific financial systems for energy efficiency and renewable energy, with energy services companies and credit institutions.	• Regional Government • AREAM	2012	2015	28 500						
Awareness raising and networking	8.7. Awareness-raising campaigns for adoption of passive measures in buildings, purchase of efficient equipment, installation of control devices, use of renewable energy for own consumption, sustainable mobility, monitoring of consumptions and adoption of more efficient practices directed mainly at the residential and services sectors, involving associations and the media.	• Regional Government • AREAM	2012	2020	237 500						
	8.8. Development of cooperation projects in the energy domain with other regions, in particular with outermost island regions presenting similar problems.	• Regional Government • AREAM	2012	2020	1 425 000						
	8.9. Elaboration of awareness-raising guides and brochures on urban regeneration, mobility, energy efficiency and use of renewable energy aimed at energy consumers, promoters/developers and professionals.	• AREAM	2013	2015	71 250						
	8.10. Promotion of cooperation activities in the energy field between public regional and local administration, research institutes, business associations, companies, credit institutions, NGOs and the media.	• Regional Government • AREAM	2012	2020	19 000						
Training and education	8.11. Development of educational material, awareness-raising and information sessions, and other educational activities on sustainable energy, involving students and teachers.	• Regional Government • DRCIE • AREAM	2012	2020	71 250						
	8.12. Introduction of eco-driving habits in training of driving school students and in complementary training of fleet drivers.	• Regional Government • Companies	2012	2020	19 000						
	8.13. Training of technicians for installation and maintenance of heating, cooling and ventilation (HVAC) systems, hot water production and other energy systems.	• Companies • Associations	2012	2020	95 000						
Monitoring	8.14. Installation of systems for monitoring and managing energy consumption in the residential sector and in services buildings.	• EEM • Companies • Citizen	2012	2020	950 000						
Legislation	8.15. Increase of supervision/inspection on applicable energy efficiency regulation (SGCIE)	• Regional Government	2012	2020	8 550						
	8.16. Increase of supervision/inspection on applicable energy efficiency regulation (SCE)	• Regional Government • Municipalities • AREAM	2012	2020	128 250						
	8.17. Preparation of a master plan for street lighting, to define efficiency and control requirements in new projects.	• EEM • Municipalities • IPM • AREAM	2012	2012	47 500						
Overall actions											
OTHER SECTORS (please specify)											
...											
...											
...											
...											
...											
TOTAL					883 969 967	358 953	497 188	449 266	358 953	497 188	449 266

3) WEBSITE

Direct link to the webpage dedicated to ISEAP (if any)

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