



1) Title of your Sustainable Energy Action Plan

ACTION PLAN FOR SUSTAINABLE ENERGY in GRANADA 2009 - 2020

Date of formal approval

2) Key elements of your Sustainable Energy Action Plan

Green cells are compulsory fields

SECTORS & <i>fields of action</i>	
BUILDINGS, EQUIPMENT / FACILITIES & INDUSTRIES:	
<i>Municipal buildings, equipment/facilities</i>	<ol style="list-style-type: none"> 1. Replacing f municipal sch <hr/> 2. Lighting im facilities. <hr/> 3. Efficient he facilities. <hr/> 4. Reduction c <hr/> 5. Energy Aud <hr/> 6. Smart light buildings.

	7. Efficiency e buildings, sec
	7. Efficiency e buildings, fir
	9. Replaceme (not sport fac
	10. Replacing
	11. Reduction municipal con occupants).
	12. Efficiency of municipal s
	13. Replacing first step.
	14. Replacing second step.
	15. Installatio heating syste
	16. Installatio pools.
	17. Energy eff extracting.
<i>Tertiary (non municipal) buildings, equipment/facilities</i>	18. Energy Au Directive appl buildings and
	19. Energy-efi for the produc
	20. Replacing
<i>Residential buildings</i>	21. Air infiltra
	22. Renewal h

	23. Replacem GHG emission
	24. Energy Pe
	25. Substitut alternative lar technology, C
	26. Micro cog systems.
<i>Municipal public lighting</i>	27. Installing
	28. Energy eff
	29. Study for lighting in Gra
	30. Installing
	31. Seasonal l
	32. Telemana
	33. Substitut
<i>Industries (excluding industries involved in the EU Emission trading scheme - ETS) & Small and Medium Sized Enterprises (SMEs)</i>	34. Promoting
TRANSPORT:	
<i>Municipal fleet</i>	35. Reduction
	36. Increasing municipal flee
	37. Increased
	38. Increased companies.
	39. Cleaning a electricity.

<i>Public transport</i>	40. Improved
	41. Increasing transport.
	42. Restructuring PMUS (Sustainable)
	43. New Albany
	44. Improved
<i>Private and commercial transport</i>	45. Improved
	46. Promoting
	47. Encouraging
	48. Creating partnerships.
	49. Promoting
	50. Installing
LOCAL ELECTRICITY PRODUCTION:	
<i>Hydroelectric power</i>	51. Power generation (water management)
<i>Wind power</i>	
<i>Photovoltaic</i>	52. PV Pilot on
	53. Installation on roofs.
	54. Solar plan
	55. Installing companies.
<i>Combined Heat and Power</i>	56. Installing gas turbines from

Otros - especifíquese: _Biogas_____	57. Electricity
LOCAL DISTRICT HEATING / COOLING, CHPs:	
Combined Heat and Power	_____

	...
District heating plant	
Otros - especifíquese: _____	
LAND USE PLANNING:	
Strategic urban planning	58. SmartCity
Transport / mobility planning	59. Urban plan
Standards for refurbishment and new development	
Otros - especifíquese: Plantación de sumideros	60. Creating n
	61. Emissions ReC02mpensa
	62. Reforestal
	63. Planting tr
PUBLIC PROCUREMENT OF PRODUCTS AND SERVICES:	
Energy efficiency requirements/standards	64. Inclusion ordinances.
Renewable energy requirements/standards	65. Certified C
Otros - especifíquese: Criterio en todos los ámbitos	66. Sustainab
WORKING WITH THE CITIZENS AND STAKEHOLDERS:	
Advisory services	_____

	...
Financial support and grants	67. Promotion consume less

<i>Awareness raising and local networking</i>	68. Promotion or other rene
<i>Training and education</i>	69. Awareness consumption :
<i>Otros - especifíquese: _____</i>	70. Awareness consumption i
	71. Awareness:
	72. Power Sav
OTHER SECTOR(S) - Please specify: _____	73. Implemen offices and pu
<i>Other - Please specify: Desarrollo económico local</i>	74. Promoting

3) Web address

Direct link to the webpage dedicated to your SEAP (if any)

www.granada.or

DISCLAIMER: The sole responsibility for the content of this publication lies with the

More information: www.eumayors.eu.

Sustainable Energy Action Plan (SEAP) t

SUSTAINABLE ENERGY ACTION PLAN

28/12/2012

Authority approving the plan Municipal Plenary Session

Grey fields are non editable



KEY actions/measures <u>per field of action</u>	Responsible department, person or company (in case of involvement of 3rd parties)	Implementation [start & end time]
ossil fuel boilers by biomass boilers in ools.	Maintenance department.	2009 - 2012
rovement in educational, social and cultural	Maintenance department.	2009 - 2020
ating devices in educational, social and cultural	Maintenance department.	2009 - 2016
of hours operation in ornamental fountains.	Maintenance department.	2009 - 2012
lit in main buildings/facilities.	Maintenance department.Urban Planning department.	2012 - 2020
ing and heating systems in municipal	Maintenance department.	2010-2020

energy measures in lighting of municipal second step.	Maintenance department. Urban Planning department.	2009 - 2012
energy measures in lighting of municipal third step.	Maintenance department.	2013 - 2020
Replacement of hot water boilers in municipal facilities (municipal facilities).	Organization Department.	2015-2020
Replacement of old HVAC equipment.	Maintenance department.	2013 - 2018
Reduction of energy consumption of lighting and heating in municipal companies (adequate behaviour of building companies).	Recruitment department and municipal companies.	2012 - 2020
Implementation of energy saving and saving energy measures in inside lighting in municipal sport facilities.	Sports department.	2012 - 2020
Replacement of fossil fuel boilers in municipal sport facilities,	Sports department.	2009-2013
Replacement of fossil fuel boilers in municipal sport facilities,	Sports department.	2014 - 2020
Installation of solar thermal panels to support the heating of the indoor pools.	Sports department.	2013 - 2020
Installation of cogeneration systems in municipal indoor pools.	Sports department.	2013 - 2020
Efficiency improving of underground water	Emasagra (water management municipal company)	2009 - 2010
Audit and Energy Performance of Buildings Implementation of efficient energy actions in equipment of the University of Granada.	Energy Office, University of Granada.	2009-2020
Efficient measures Implementation of heat in the University of Granada.	Private schools.	2011-2020
Replacement of fossil fuel boilers in schools (not municipals).	Energy Office, University of Granada.	2009-2020
Energy consumption reduction in domestic buildings.	Citizenship, Agenda 21 Local.	2011- 2020
Replacement of household electrical appliances.	Citizenship, Agenda 21 Local.	2011-2020

ent of boilers in household buildings to reduce is.	Citizenship, Agenda 21 Local, UGR.	2010-2020
performance in new buildings.	Technical department of municipal construction company.	2007-2020
on of incandescent lamps by more efficient mps (mproved incandescent bulbs with halogen compact fluorescent lamp (CFL), LED,...).	Citizenship, Local Agenda 21.	2009-2016
eneration: towards decentralized energy	Citizenship, Local Agenda 21.	2013-2020
LED traffic lights.	Transport department.	2009 -2010
iciency in public lighting.	Maintenance department.	2009 - 2012
the improvement and upgrading of public anada.	Maintenance department.	2011-2013
stabilizers and reducers in public lighting.	Maintenance department.	2013 - 2014
oliday efficient lighting.	Maintenance department.	2009 - 2012
gement system in public lighting.	Maintenance department.	2013-2021
on of old lamps by LED in public lighting.	Maintenance department.	2013-2020
g ICT-based economy.	Local Agenda 21. Trade department. Employment department.	2010-2020
of local authority's own fleet.	Municipal fleet office. Organization Department.	2009-2011
g use of biofuels, GLP and electricity in the st	Municipal fleet office. Organization Department.	2010-2015
electric vehicles number in the municipal fleet.	Municipal fleet office. Organization Department.	2016-2020
electric vehicles number in municipal	Municipal Company	2009
and waste management fleet that use biofuel or	Maintenance department. Subcontracted company.	

public transport.	Transport department.	2009-2011
ing use of biofuels, GLP and electricity in public	Public transport company.	2009-2020
ring of public transport, through measures nable Urban Mobility Plan).	Transport department.	2012-2020
ycín minibus line.	Public transport company.	2012
intercity transport.	Transport department. Metropolitan Transport Consortium. Intercity rail transport company.	2013 - 2020
management of urban freight distribution.	Transport department.	2009-2020
1 of walking (PMUS)	Transport department.	2009-2020
ng people to cycle (PMUS).	Transport department.	2009-2020
platform for metropolitan and municipal car	Agenda 21 Local, Center data processing, Transport department. Regional Government.	2009-2020
1 of cycling to go to work by city workers.	Organization Department.	2013-2014
bicycle parking at schools.	Local Agenda 21, Transport department.	2009-2020
neration by the hydroelectric plant of Emasagra gement municipal company).	Process Department of Emasagra	2010
n the cover of the fire station.	Maintenance department.	2009 - 2012
on of photovoltaic solar panels on municipal	City of Granada.	2012 - 2020
it in the new building of the Science Park.	Science Park.	2008
photovoltaic plant on the roofs of municipal	Municipal companies.	2011
a heat recovery system of the combustion ematoria.	Emucesa	2011 - 2012

generating plant of the landfill in Viznar	Inagra S.A.	2009 - 2015

	_____	_____
	_____	_____

project Granada.	City of Granada and stakeholders.	2015-2020
Planning with sustainable mobility criteria.	City of Granada and stakeholders.	2013-2020
new green areas.	Urban Planning department. Maintenance department.	2009-2010
Reduction Project: "Granada REDuce y 3"	Environmental department. Private companies.	2014-2020
Restoration of degraded areas.	Maintenance department.	2011-2020
Trains on the route of the metro.	Intercity rail transport company. Environmental department.	2013-2020

Implementation of energy efficiency criteria in municipal	City of Granada.	2013-2020
Green power purchases by the city.	Procurement department.	2014 - 2020
Public procurement.	Local Agenda 21, Legal environment service and recruitment department. Procurement department.	2014-2020

	_____	_____
	_____	_____

Replacement of changing tires with more efficient ones that fuel.	Citizenship, Local Agenda 21.	2013-2020

1 of the use of biofuels wable fuels for transport.	Local Agenda 21. Brand of hybrid vehicles.	2013-2015
s campaigns to promote responsible energy among the public.	Local Agenda 21. City of Granada.	2009-2020
s campaigns to promote responsible energy in the tertiary sector.	Local Agenda 21. Trade department. Employment department.	2013-2020
s campaigns for efficient driving.	Local Agenda 21. Transport department.	2009-2020
ving Scheme in schools.	Local Agenda 21. Environment and maintenance department.	2011-2020
itation of state savings plan administration in blic services.	Ministry of Environment.	2013-2020
g local businesses.	Trade department.	2014-2020

g/inet/agenda21.nsf/w02!OpenView&Start=1&Count=30&Exp

authors. It does not necessarily reflect the opinion of the European Communities. The European Comm

emplate

 [Instructions](#)

Estimated costs <u>per action/measure</u>	Expected energy saving <u>per</u> <u>measure</u> [MWh/a]	Expected renewable energy production <u>per measure</u> [MWh/a]	Expected CO2 reduction <u>per measure</u> [t/a]	Energy saving target <u>per sector</u> [MWh] in 2020	Local renewable energy production target <u>per sector</u> [MWh] in 2020
1000000,00	0,0	1371,85	371,19		
1130000,00	595,7		262,11		
128518,00	212,3		59,23		
0,00	1000,0		440,00		
	494,0		136,60		
4600000,00	2220,0		976,80		

39920,69	106,0		46,64
276120,00	205,5		90,42
-	0,0		17,20
160000,00	990,0		435,60
0,00	2566,5		1129,24
280000,00	181,5		79,88
510000,00		15768,00	604,84
-	0,0		105,00
200000,00	1083,9	503,70	300,00
-		867,16	241,94
0,00	430,0		194,00
-	784,5		345,18
615000		844,21	235,53
-	150,0		600,00
50438000,00	53704,2		19540,75
203992,50	5906,0		2598,65

56386000,00	20791,5	3385,51	6136,35	
13290700,00	3290,9	3.290,94	679,68	
8580000,00	61,8		27,18	
4895700,00		14.323,43	1695,82	
0,00	1122,0		493,68	
805000,00	800,0		352,00	
0,00	440,0		193,60	
-	968,0		425,92	
70000,00	412,0		181,28	
900000,5	1000,0		440,00	
157000,00	1500,0		660,00	
0,00	7268,4		3198,09	
			52,48	
	199,0			
			27,50	
	0,0			
	300,0			
108000,00	6,3		1,74	
			2342,49	
	6,3			

115000,00	2842,05		1023,14
50000,00	0,0		7411,73
200000,00	1960,5		523,44
-	9,0		2,39
3454251,15	320272,2		84739,28
300000,00	874,2		233,39
480000,00	140205,6		17664,79
1250000,00	23233,5		2927,23
10000,00	3110,4		1119,75
5000,00	182,2		48,64
120000,00	6798,0		302,40
900000	— — ...	4540,00	2040,00
400000,00		178	78,32
5600000,00		10150	4466,00
1900000,00	479,8	287	260,00
114000,00		51	22,47
50000,00	182,7		50,98

53000,00	250,0	3813,60	3532,00	
_____	---	---	---	
_____	---	---	---	
...	
1000000,00		100,00		
0,00	98,5	---	35,47	

		...		
470000,00			714,0	
171000,00			135,0	
1200000,00			3113,6	
368000,00			558,8	
0,00	1626,0	0	715,4	
360211,71		32519,26		
40000,00	162,6		71,5	
_____	---	---	---	
_____	---	---	---	
...	
1000,00	73,0		19,00	

3000,00			37,00		
20000,00	22715,5	39979,19	9778,15		
15000,00	18476,9	3251,43	8129,81		
2000,00	145672,0		38203,94		
2000,00	492,4		216,65		
18000,00	15512,5		6825,50		
12000,00	3445348,8	— — ...	873,3		
TOTAL:					

ission is not responsible for any use that may be made of the informat











