Climate Adaptation in Cascais

CASCAIS AMBIENTE

Cascais

+ 97 km2

+ 30 km coastal line

+ 1/3 of protected landscape

+ Metropolitan Area of Lisbon

+ Renowned tourist destination

+ 206 000 inhabitants

+ Unrivaled heritage

Cascais

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Strategic Plan for Climate Change in Cascais

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+ **PECAC** (2009) is the result of a multidisciplinary team coordinated by the CC-IAM group of the Faculty of Science of the Lisbon University.

Temperatura máxima (°C)

	actual	meados do séc. XXI				finais do séc. XXI			
		A1	A2	B1	B2	A1	A2	B1	B2
Janeiro	11.7	2.0	1.7	1.3	1.1	3.9	3.4	2.5	2.3
Fevereiro	12.2	2.0	1.6	1.4	1.3	4.0	3.1	2.8	2.5
Março	13.8	2.1	1.5	1.0	0.9	4.2	3.0	2.1	1.7
Abril	15.5	3.0	2.0	1.1	1.3	5.9	3.9	2.2	2.6
Maio	17.3	4.6	3.5	2.2	2.1	9.1	7.0	4.5	4.3
Junho	19.6	5.5	4.1	3.1	2.9	11.0	8.2	6.2	5.8
Julho	21.6	6.0	4.9	3.4	4.1	11.9	9.7	6.8	8.1
Agosto	21.9	4.9	4.1	2.6	2.6	9.7	8.2	5.2	5.1
Setembro	21.1	4.5	3.4	2.8	2.2	9.0	6.8	5.7	4.4
Outubro	18.9	3.9	3.3	2.2	2.0	7.8	6.5	4.4	4.0
Novembro	15.3	2.2	1.8	1.4	1.4	4.5	3.7	2.8	2.9
Dezembro	12.6	1.9	1.3	0.6	1.1	3.7	2.6	1.2	2.1

Water resources

Agriculture

Coastal zones

Human health

Biodiversity

Tourism

Engagement + Integrated activities

European Commission
Climate Action

Covenant of Mayors for Climate & Energy

ClimAdaPT.Local

Interreg Sudoe

our world our dignity our future

THERMOS

eea grants

BASE

CDP DRIVING SUSTAINABLE ECONOMIES

INNOENT

Cascais' Action Plan for Climate Change Adaptation

Structured action 2030

+ Planning ahead: 3 political terms

+ Updated climate scenarios with IPCC 5. Corroboration of PECAC's scenarios.

+ inter-institutional collaboration and co-responsibility

+ Integration with UN's Sustainable Development Goals 2030 and national commitments

+ Submitted on Town Hall Meeting – mandatory commitment

PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

Cascais' Action Plan for Climate Change Adaptation

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+ Workshops with stakeholders following "BASE Adaptation's" methodologies

+ multi-institutional workgroup aggregated by sector

+ Retrieve information on what existing projects can cope with climate change and what needs to me added (integrated)

+Independent commission for implementation

+ Inclusive

Cascais' Action Plan for Climate Change Adaptation

Climatic variable	Impacts
	Decrease of average of precipitation
	Increase of average temperature, mainly maximum
	Sea level rise
	Increase of extreme precipitation events

Cascais' Action Plan for Climate Change Adaptation

	Adaptation Measures
1	Stakeholder awareness
2	Residual and pluvial water separation network
3	Sustainable school
4	Local alternatives to water supply
5	Green corridors and riverbeds requalification
6	Eliminate pollution in water beds
7	Reforestation in the natural park with native species and control of invasive ones
8	Full implementation on the fire prevention plan
9	Coastal erosion prevention actions
10	Contingency plan for heat waves
11	Vigilance and control of vector diseases
12	New urban green parks and natural infiltration areas
13	Legislation for bioclimatic architecture in urban areas

+ 13 Measures

+ 82 actions

+ €11 500 000 investment

+ Mostly "non-structural" or "green solutions".

+ "gray solutions" for water supply infrastructure

+ Transversal reply to the Sustainable Development Goals 2030

Adaptation: Awareness and Education

CLIMATHON CASCAIS

UNIVERSIDADE NOVA SBE

26 out'18

+ 30 000 citizens reached

+ 200 professionals trained

+ 20 communication actions

Adaptation: Awareness and Education

Adaptation: Awareness and Education

Adaptation: Water resources

+ complete secondary water supply system (higher areas)

+ elevation stations maintenance and self-supply concluded

Adaptation: Water resources

Adaptation: Civil protection and health

dados incendio - Bloco de notas

Ficheiro Editar Formatar Ver Ajuda

Date	Time	Temp Out	Hi Temp	Low Temp	Out Hum	Dew Pt.	Wind Speed	Wind Dir	Wind Run
06-10-18		19:30	18.7	19.1	18.7	71	13.3	0.0	NE
06-10-18		20:00	18.4	18.7	18.4	75	13.9	0.0	NNE
06-10-18		20:30	18.2	18.4	18.2	75	13.7	0.0	NNE
06-10-18		21:00	17.8	18.2	17.8	74	13.1	0.0	NNE
06-10-18		21:30	17.7	17.8	17.6	70	12.1	0.0	NNE
06-10-18		22:00	17.4	17.7	17.4	69	11.6	0.0	NNE
06-10-18		22:30	17.1	17.4	17.1	72	12.0	0.0	NNE
06-10-18		23:00	16.9	17.1	16.9	73	12.1	0.0	NNE
06-10-18		23:30	16.7	17.0	16.7	76	12.5	0.0	NNE
07-10-18		00:00	16.6	16.8	16.6	77	12.6	0.0	NE
07-10-18		0:30	16.5	16.7	16.5	77	12.5	0.0	N
07-10-18		1:00	16.6	16.6	16.4	74	11.9	0.0	NNE
07-10-18		1:30	16.9	17.1	16.5	71	11.6	0.0	---
07-10-18		2:00	20.4	20.4	16.9	63	13.1	0.0	N
07-10-18		2:30	20.5	32.6	20.4	63	13.2	1.6	N
07-10-18		3:00	18.7	20.6	18.4	65	12.0	0.0	N
07-10-18		3:30	18.0	19.1	18.0	65	11.3	0.0	NNW
07-10-18		4:00	17.1	18.0	16.9	68	11.2	0.0	NW
07-10-18		4:30	16.3	17.1	16.2	74	11.6	0.0	NW
07-10-18		5:00	15.8	16.3	15.7	74	11.2	0.0	---
07-10-18		5:30	15.7	15.9	15.4	70	10.3	0.0	NNW
07-10-18		6:00	15.6	15.8	15.5	69	9.9	0.0	WNW
07-10-18		6:30	15.2	15.7	15.2	72	10.2	0.0	---
07-10-18		7:00	14.9	15.2	14.8	72	9.9	0.0	---
07-10-18		7:30	14.6	14.9	14.6	73	9.8	0.0	---
07-10-18		8:00	14.4	14.6	14.4	74	9.9	0.0	---
07-10-18		8:30	14.6	14.6	14.4	75	10.2	0.0	---
07-10-18		9:00	14.8	14.8	14.5	73	10.0	0.0	---

+ all year monitoring

+ all riverbed areas cleaned and monitored

+ information shared between health stakeholders

3 GOOD HEALTH AND WELL-BEING

11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

17 PARTNERSHIPS FOR THE GOALS

Adaptation: Civil protection and health

Adaptation: Ecological infrastructure and resilient urban green spaces

+ 17 autochthones species

+ 5000 volunteers

+ best practice manual for urban green spaces design and maintenance

+ dune system maintained

Adaptation: Ecological infrastructure and resilient urban green spaces

Adaptation: Ecological infrastructure and resilient urban green spaces

Adaptation: Spatial Planning

	Unidades de Resposta Climática Homogénea (Climatopos)	Área	Funções climáticas: recomendações com vista à mitigação do stresse térmico e manutenção/melhoria das condições de ventilação;
	Áreas de intervenção		Potencial eólico para a instalação de mini turbinas.
			7) Possibilidade de utilização do potencial eólico para micro geração nas áreas de expansão urbana. "Boa", "Muito Boa" e "Excelente" aptidão futura mantendo a distância máxima de 150m das futuros perímetros urbanos).
	1.3 Área de transição oriental, de média e baixa densidade urbana.	8,9	a) Igual a 1.2
	1.4 Áreas de média e baixa densidade urbana da Serra de Sintra.	0,6	a) Igual a 1.2 e 1.3
2. Espaços verdes	2.1 Espaços verdes, predominantemente ocupados por florestas, parques urbanos e jardins.	6,3	a) Manter e, se possível, aumentar estes espaços porque desempenham um importante papel na promoção de condições bioclimáticas (contribuindo para o arrefecimento das áreas urbanas adjacentes, através do efeito de sombra e de evapotranspiração) e na biodiversidade. b) Nos espaços verdes de proteção, favorecer manchas densas de árvores de folha persistente.
	2.1 Espaços verdes, predominantemente ocupados por florestas, parques urbanos e jardins.	30,6	a) Possibilidade de utilização do potencial eólico para micro geração.
3. Topos	3.1 Topos com predominância de ocupação urbana e manchas florestais	3,9	a) Possibilidade de utilização do potencial eólico para micro geração nas áreas de "Boa", "Muito Boa" e "Excelente" aptidão para a instalação de mini turbinas, à distância máxima de 150 metros dos perímetros urbanos atuais e futuros.
	3.2 Topos com predominância de herbáceas e outras áreas de baixa rugosidade aerodinâmica	3	
4. Corredores de ventilação	4.1 Vales com ocupação urbana de média e alta densidade	4	Zonas de proteção específica de ventilação: 1. Ribeiras das Vinhas e Castelhana. 2. Ribeiras da Amoreira e Cadaveira. 3. Ribeira de Manique. 4. Ribeiras das Marianas e Sassoeiros. a) Preservar os vales de novas construções e da ocupação com vegetação densa.

CÂMARA MUNICIPAL

+ integrated team for urban process benefits under sustainable development principles

+ climate chart for urban processes

+ special ruling for large infrastructures

+ ecosystem services

+ regulation for adaptation

Cascais' Action Plan for Climate Change Adaptation

Lessons

+ **Team coordination** and knowledge leveling were unexpected challenges

+ Non-structural actions, such as training and awareness should be considered **a priority for action momentum**

+ Most actions which tackle vulnerabilities are **nature-based solutions.**

+ Cities must ensure the inclusion of adaptation actions in **planning instruments and construction regulation.**

+ Together, climate action strategies will provide a **transformative spirit to innovate** and find new approaches for resource efficiency: win-win

CASCAIS

Tudo *começa nas* pessoas

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