Intelligent Energy Europe

POLIS
Identification and mobilisation of Solar POtentials via Local strategies

Solar urban planning

The Local state of the art

Vitoria-Gasteiz (Spain)

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Political, Legal and economic framework

1.1 Is there a local energy plan or energy strategy in your city? What are the main objectives and targets towards energy efficiency and renewable energies?

	**Plan/Strategy**	**Year end objective of the plan/strategy for Renewable Energies**		**Energy efficiency**
		Solar Thermal	**Solar Photovoltaic**	
Basque Country	Basque Energy Strategy 2010	151.567 m^2	10´7 MW	1 Mtep
Province of Álava	Mugarri Plan 2010-2020	60.000	15 MW	Not mentioned
City of Vitoria-Gasteiz	Air Quality Management Plan 2003-2010	20.000 m^2	250 kW	10% savings in 2010 (compared to 2001)
	Local Energy Plan 2007-2012	25.000 m^2 or 1505 tep	2 MW	9% savings in 2012 (compared to 2004)

1.2 Local thermal building regulations and/or building energy certification

The national criterion is the **Technical Building Code (TBC).** The TBC (PDF) has 12 Basic Documents. One of them, the **DB HE** (PDF), establishes energy saving measures. It is divided in 5 parts (HE1 to HE 5). H4 establishes the requisites for solar thermal installations, and H5 does so for

solar photovoltaic.

Locally, Vitoria-Gasteiz is developing a **Local Energy Management Bylaw**, that develops the national criteria, but it has not been approved yet.

1.3 Existing local solar photovoltaics/thermal/renewable obligations.

The main criterion is the application of the national Technical Building Code. At local level, there are two instruments that ask for further requirements on solar energy:

1. PGOU or Master Plan (Book III, Title V, Chapter 1, Section 1, Part 1, Article 5) : Solar irradiation. The facade at least 1 hour of irradiation on its southern part, at 2 m height from lower ground, as to 22nd December date.
2. Administrative Statement by Ensanche 21 (Social building Agency linked to City Council): The roof surface area of the social buildings promoted by Ensanche 21 and not used for solar thermal, will be conceded to the City Council of Vitoria-Gasteiz for 99 years for the eventual installation of solar photovoltaic panels.

1.4 Financing mechanisms and available subsidies at local level for adopting solar technologies?

There are subsidies and fiscal benefits to promote solar energy (among other clean technologies):

1. **Subsidies**

There are 2 different subsidies available in the Basque Country, managed by the Environmental Department of the Basque Government and EVE (Ente Vasco de la Energía-Basque Energy Agency), a public institution linked also to the Basque Government:

Institution	Subsidy	Beneficiaries	Benefits	Link
Environmental Department of the Basque Country Government	Decree 91/2002 of subsidies for investments to protect the environment	Companies of the Basque Country	Up to 30% of the eligible cost of the investment	http://www.euskadi.net/bopv2/datos/2002/05/0202757a.pdf

EVE	Solar FV installations connected to network (up to 20 kW)*	People, companies and local institutions of the Basque Country	Up to 1,5€ / Wp	http://www.eve.es/WEB_EVE_2009/Ayudas-(1)/Listado-de-Ayudas.aspx?filtro=0
	Solar FV installations NOT connected to network (up to 20 kW)		Up to 10 €/Wp for installations with energy accumulators Up to 8 €/Wp without accumulators	
	Low temperature solar thermal (Up to 150 m^2)*		1015-1450 € / kW, depending on installation.	

The Basque Government has also completed a Basque List of Clean Technologies. These Clean Technologies are eligible for the Decree 91/2002 subsidies, though there are doubts if the solar technology is eligible for this subsidy because the Decree is going to be modified by summer 2010.

Basque List of Clean Technologies
Silicon photovoltaic solar collector
Solar thermal vacuum collector for water heating
Flat solar thermal collector for water heating

2. Fiscal benefits

There are no subsidies by the city of Vitoria-Gasteiz and the province of Álava right now, but there are some fiscal benefits.

	Tax benefits for installing solar thermal and photovoltaic		**LINK**
Province of Álava	**30%** reduction on the **Corporation Tax** for investments in Solar Technologies enlisted in the Basque List of Clean Technologies*	**15%** reduction on the **Corporation Tax** for investments in OTHER Solar Technologies not enlisted in the Basque List of Clean Technologies*	**Regional Law (Normal Foral 24/1996):** http://www.alava.net/cs/Satellite?c=Page&cid=1223984911869&language=es_ES&pagename=DiputacionAlava%2FPage%2FDPA_B_Listado
City of Vitoria-	**50%** reduction on **IBI tax**	**30%** reduction on **ICIO tax**	**IBI tax:** http://www.vitoria-

Gasteiz	(tax for owning a house) during the first 3 years after installation.* **Photovoltaic**: Minimun of 5 kW for each 100m^2 roof surface. **Thermal**: Minimun of 4 m^2 for each 100m^2 roof surface.	(tax for works on buildings).*	gasteiz.org/we001/was/we001Action.do?aplicacion=wb021&tabla=contenido&idioma=es&uid=1882a5a_1200df68919__7fa4 **ICIO tax:** http://www.vitoria-gasteiz.org/we001/was/we001Action.do?idioma=es&aplicacion=wb021&tabla=contenido&uid=_262b27c6_120132a3546__7fee

* Only if solar installation is not mandatory by the Technical Building Code

2 Urban practices framework

2.1 Describe briefly the main criteria on the current urban practices, e.g. guidelines for urban plans development and requirements on solar urban planning if these exist.

The main criterion is the application of the **PGOU or Master Plan of Vitoria-Gasteiz** and the national **Technical Building Code**. At local level, there are two instruments that ask for further requirements on solar energy, one of them embedded in the Master Plan:

1. PGOU or Master Plan (Book III, Title V, Chapter 1, Section 1, Part 1, Article 5) : Solar irradiation. The facade at least 1 hour of irradiation on its southern part, at 2 m height from lower ground, as to 22 December date.
2. Administrative Statement by Ensanche 21 (linked to City Council): The roof surface area of the social buildings promoted by Ensanche 21 and not used for solar thermal, will be conceded to the City Council of Vitoria-Gasteiz for 99 years for the eventual installation of solar photovoltaic panels.

2.1.1 If there are no guidelines on solar urban planning, explain the political process for developing the legal bounding framework. At what administrative level would a solar urban planning obligation be decided and managed? How much time would/can such a

process last?

The process of incorporating the solar urban planning to the legal framework needs the following steps:

1. Law proposal by the Urbanism-Planification Department of the City Council of Vitoria-Gasteiz.
2. Approval of the law proposal by the Political Groups of the city.

Depending on the law category, the timing for the incorporations of the solar urban planning differs:

- If we want to modify the PGOU (Master Plan) , the process takes around 9-12 months.
- Or we may elaborate a Solar Energy Bylaw, (therefore, not modifying the Master Urban Plan) which takes 6-8 months.

The management and control of the urban planning in general is not an easy task and many administrations have problems to cope with it. The Technical Building Code is a recent law (2006) that still needs to be fully incorporated in the administration.

2.1.2 Did you have tentative start-ups of similar experience in the past?

In December 1998, a Partial Plan was elaborated just for the Sector 7 (Salburua District) where all the new buildings were southern orientated for the best solar potential.

2.2 Do you or would you face problems with large exemption categories, e.g. historical buildings or landscape protected areas?

Depending on the category, different tools have to be used to manage these exemption categories:

1. **Medieval Quarter**

Vitoria-Gasteiz has a Medieval Quarter located in the central point of the city. The urban management of this Medieval Quarter competes to a public institution called Medieval Quarter Integral Revitalization Agency (Agencia de Revitalización Integral del Casco Histórico "ARICH"). Any attempt to integrate solar panels on the roofs of any building in this area has to be negotiated with this ARICH Agency.

So far, solar thermal has been installed on the roofs of three refurbished buildings in Zapatería Street 22 and 33, and Pintorería Street 20.

2. Historical Buildings

Although there is a regional law about the protection of historical buildings and patrimony in general, the installation of solar panels could be adequate depending on the state of the building structure. Therefore, there must be a study of each historical building to know its capacity to support a solar panel installation.

3. Protected natural areas

The Basque Country has several laws called "Sectorial and territorial plans" and others as the "Natural Resources Management Plan" which categorizes the land and natural areas on best uses, adequate uses and forbidden uses. Depending on these laws, the use of the land for solar energy purposes may be allowed or not, and therefore, it depends on the protection grade of the natural area.

2.3 How is the solar urban planning obligation monitored, or by which means would be adequate to monitor/control the effective implementation of the solar urban planning requisites?

Due to the few years that the Technical Building Code (TBC,2006) is being applied, the monitorization and control of the effective implementation of the TBC and the solar installations is not an easy task and has not been developed with the effectiveness that the City Council would desire.

To improve this problem, some measures are being planned, but any of them has been approved yet. One of them, it would be the creation of a "Solar installation maintenance contract for 2 years", where the constructors and promoters would have to maintain the solar panels during the first 2 years. After these two years, the owners and neighbours of the building should take care of this maintenance. This is a real problem because this maintenance is quite expensive and many neighbours decline to pay for it, so the solar panels sometimes are turned off. The City Council is

thinking about a way to make this maintenance interesting for these neighbours, as lowering some taxes, but nothing has been approved yet.

2.4 Which are the local stakeholders involved in promoting solar urban planning and what is their attitude towards renewables obligation (e.g. are building companies used to renewables)?

	Local Stakeholders		
Basque Country	EVE (Basque Energy Institution)	Visesa (Public Building promoter)	Professional Colleges (Architects, Engineers…)
Province of Álava	Diputación Foral de Alava (Environmental Department)	Energy and building companies	
City of Vitoria-Gasteiz	Ensanche 21 (Public building promotor)	Solar installator companies	

About the attitude of the stakeholders, there is an important support of the institutions. Private companies, though interested, are worried about the expensiveness of the investments, and even more in the actual economic crisis.

Which local networks are available to promote and disseminate solar urban planning?

The City Council has a forum for the participation of different stakeholders called “Environmental Sectorial Council”. This forum is a meeting point to promote and disseminate the different environmental themes that the City Council is working on. Other forums and institutions could be the “Planning Assessor Council” and the “Commerce Chamber”.

3 Building Stock

3.1 Provide some data on the existing local building stock.

	Building Stock (2008 data)
City of Vitoria-Gasteiz	100.272

3.2 Please indicate future construction/renovation projects in your city where

effective policy for solar urban planning could be implemented.

There are no projects right now where solar is integrated on urban planning. The POLIS project will be the toll to determine the best districts to develop solar urban planning projects.

3.3 Refurbishment activities: please quantify the refurbishment activities in your municipality with as much detail as possible (e.g. refurbishment rate, costs of refurbishment...).

Refurbishment activities are increasing moderately in Vitoria-Gasteiz. There are some districts built on the sixties and seventies that need to be refurbished or demolished. Some of these refurbishments have been made to lower the energy demand of the old buildings, built with no thermal isolation and therefore have important energy consumptions.

	2006	2007	2008
Refurbished buildings	70	67	47

One of the most important refurbishment was made in the Zaramaga District in 2006 to lower this energy consumption. The project had the goal of incorporating the facade 4cm of expanded polystyrene as thermal isolation and the substitution of one-glazing windows with double-glazing windows and aluminium carpentry. The cost of the project was 148.000 €.

The energy consumptions of the building before and after refurbishment are the following ones:

Building	**Total Comsuption** kWh/year	**Consumption per housing** KWh/year
Before refurbishment	338.852	18.825
After refurbishment	252.112	14.006

4 Solar Market and Potential

4.1 Installed solar (thermal/photovoltaic) capacity at local level.

	Solar photovoltaic capacity installed (2008)	Solar thermal capacity installed (2008)
Basque Country	18,25 MWp	16.974 m^2
Province of Álava	6,71 MWp	6.042 m^2
City of Vitoria-Gasteiz	0,91MWp	5.350 m^2

Source: EVE.

4.2 Effective contribution of solar energy for the local energy mix.

Around 0,1%.

4.3 Technical/economical potential at local level.

30.000 m^2 of solar thermal and 10 MW of solar photovoltaic.

4.4 Percentage of energy demand to be covered if such capacity would be reached.

With the energy consumption of 2006, the energy demand covered by solar would be around 0.4%.

4.5 Are there renewable technologies which are widely diffused in your city and that can therefore contribute in a renewable obligation?

Use of **refusal biogas** of the Domestic Waste Treatment Plant to produce electricity.