National Renewable Energy Action Plan For Gibraltar

Submitted by the Department of the Environment of the Ministry for Health, Environment, Energy & Climate Change of Her Majesty's Government of Gibraltar

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1. Summary of Renewable Energy Policy

Gibraltar is a British Overseas Territory. An inalienable part of the United Kingdom, and not a member state in its own right, Gibraltar has nevertheless adopted the target of 15% of total final energy consumption to come from renewable energy by 2020. Furthermore it targets 27% of consumption from renewable energy by 2030.

Her Majesty's Government of Gibraltar's (HMGOG) energy policy is based upon three principal objectives. These are listed below and expanded on in the following sections:

1. To provide a secure and affordable supply of energy;
2. To produce energy in an environmentally sound & sustainable manner;
3. To promote policies that improve energy efficiency.

1.1. Providing a secure and affordable supply of energy

Gibraltar's geographical and political setting requires it to be self-sufficient in energy terms. Isolated electrically from the rest of the continent, it is particularly important that all of Gibraltar's energy sources be reliable. In this regard, indigenous renewable energy sources are very important to the future energy security of the peninsula.

The fact that Gibraltar has no natural fossil fuel supplies and must therefore import 100% of the fuel needed to meet its energy demand suggests that present energy arrangements will be neither secure nor sustainable in the long term. Therefore, HMGOG targets the reduction of energy demand through the implementation of energy efficiency measures and reduced fossil fuel consumption, via investment in renewable energy technologies.

Gibraltar has commissioned Bouygues Energies & Services to replace the peninsula's three aged, diesel-fired power stations, with a single, state-of-the-art power station by 2017. The new power plant will comprise 6 MAN engines of 14.5 MW each, representing a total rated capacity of 87 MW, sufficient to cover projected electricity demand growth up to 2030.

Importantly, this initiative represents a shift away from a diesel-fuelled past, towards a power generation paradigm that is significantly cleaner. The new power plant will be gas-fired, based on imported liquid natural gas (LNG).

1.2. Producing energy in an environmentally sound and sustainable manner

Gibraltar is committed to producing energy in an environmentally sound and sustainable manner by investing in renewable energy technologies that match its resources and energy needs.

Of equal importance is the fact that gas-fired engines are very flexible in terms of their output, and as such represent an ideal complement to solar, wind, wave and marine current energies; these technologies, and in particular solar energy, which represents the lion's share of near-term renewable energy opportunities, are variable in output.

In 2014, HMGOG completed the Gibraltar Renewable Energy Strategy that targets a minimum of 15% of energy consumption from renewable energy sources by 2020, and 27% by 2030. This is part of HMGOG's drive to provide secure, affordable and cleaner energy to its citizens.

The 15% and 27% energy targets could be achieved in 2020 and 2030 respectively by "greening" energy supply in the electricity and transportation sectors (as nearly all heating and cooling in Gibraltar is powered via electricity, greater effort will be required in the other sectors).

Analysis of opportunities to green the transport sector is currently in preparation in HMGOG's Sustainable Traffic, Transport and Parking Plan (STTPP).

In its recent Renewable Energy Strategy and related activities, HMGOG has identified that solar PV and low-temperature solar thermal (solar water heating, SWH) represent suitable avenues to achieving its targets, while additional scope exists for wave energy, tidal stream and offshore wind. There is also the opportunity for onshore wind but this is limited by Gibraltar's geographical size, and the protection of the only otherwise promising areas under the Habitats Directive and local legislation.

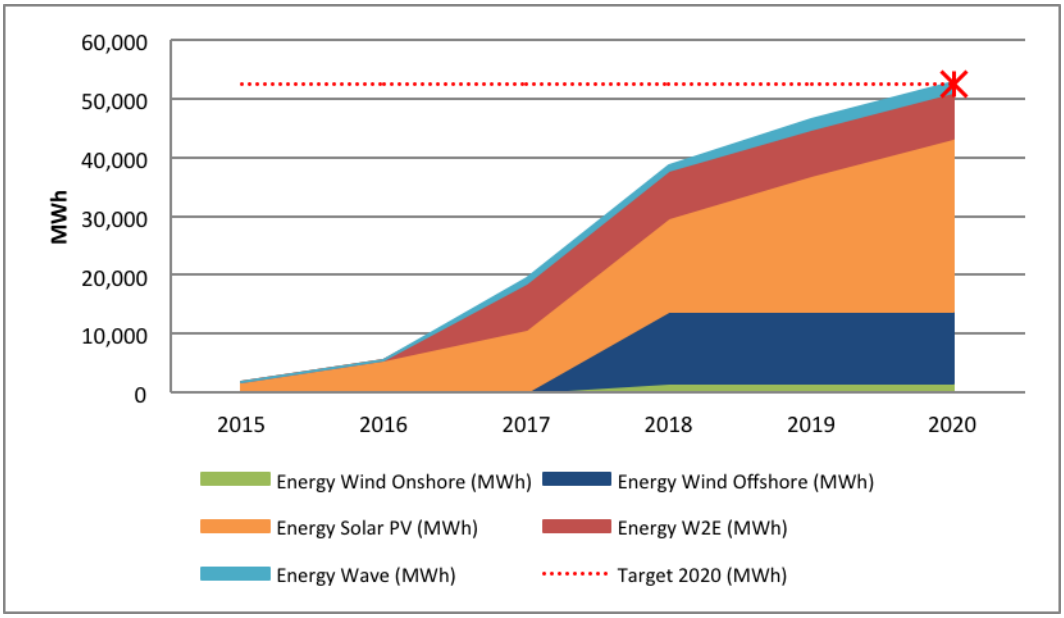
Gibraltar aims to deploy renewable electricity capacity – in particular solar photovoltaics – to meet 15% of Gibraltar's overall energy consumption and 22% of its electricity consumption. This does not represent a ceiling on the potential, but rather a minimum first step, bringing the country in line with EU requirements under the Renewable Energy Directive.

Figure 1 highlights one possible pathway towards meeting the 2020 target for 53 GWh of electricity for renewable energy. While solar PV represents the greater share of production,

offshore wind could begin to take a major role – under this scenario beginning in 2018. Waste to energy is also important, while wave and onshore wind play a lesser role.

Figure 1 does not represent the only renewable energy activities; in addition, HMGOG is driving forward the deployment of solar water heating plants and biofuels uptake in road transport.

Figure 1: Electricity supply from Renewables up to 2020



HMGOG is currently developing a number of renewable energy deployment initiatives. These include:

- Detailed assessment of wind and solar resources;
- Solar PV and SWH pilot projects; namely at The Tercentenary Sports Hall, the municipal swimming pool, and the housing estate Tangier Views;
- Solar PV power purchase agreements (PPAs) with a number of investor / developer consortia, generating an estimated excess of 10 MW;
- PPA with a demonstration of 500 kW by a wave energy converter company, with the potential to scale up to 5 MW;
- Vertical axis onshore wind turbines in the Aerial Farm housing development;
- Analysis of offshore wave energy potential including current speeds and seabed conditions;
- Marine current resource assessment;

- Tendering for a municipal solid waste treatment plant using advanced thermal technology;
- Tendering for waste water treatment plant;
- Encouraging micro-renewable energy technologies in all new developments.

Further initiatives are listed in Table 5 below.

1.3. Promoting policies that improve energy efficiency

Alongside its diverse initiatives to drive forward the deployment of renewable energy, Gibraltar has developed and is implementing a National Energy Efficiency Action Plan (NEEAP). HMGOG is committed to the introduction of energy efficiency policies across the residential, business, public, industrial and transport sectors. Further details of policies can be found in the NEEAP: https://www.gibraltar.gov.gi/environment/environment and the Government's Sustainable Traffic, Transport and Parking Plan to be published shortly.

2. Expected Final Energy Consumption 2010-2020

Table 1: Expected Final Energy Consumption 2010 – 2020 (ktoe)

	2005	2010		2011		2012		2013		2014	
	Base Year	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency
Heating & cooling	Not applicable to Gibraltar: all heating and cooling is based on electricity consumption										
Electricity	16.423	22.958	18.142	23.835	17.987	24.746	17.626	25.701	18.744	26.690	18.649
Transport* **	97.5	111.8	n/a	107.7	n/a	109.8	n/a	**	n/a	**	n/a
Gross final energy consumption	161.7	134.758	18.142*	131.535	17.987*	134.546	17.626*	25.701*	18.744*	26.690*	18.649*

* Does not include values for transport. ** Data not yet available: analysis ongoing. ***Reference Scenario data up to 2012 from International Energy Agency: http://www.iea.org/sankey/#?c=Gibraltar&s=Final%20consumption n/a not applicable

	2015		2016		2017		2018		2019		2020	
	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency
Heating & cooling	Not applicable to Gibraltar: all heating and cooling is based on electricity consumption											
Electricity	27.730	19.118	28.813	19.501	30.110	19.891	31.465	20.289	32.880	20.694	34.360	21.108
Transport	**	**	**	**	**	**	**	**	**	**	**	**
Gross final energy consumption	27.730*	19.118*	28.813*	19.501*	30.110*	19.891*	31.465*	20.289*	32.880*	20.694*	34.360*	21.108*

* Does not include values for transport. ** Data not yet available: analysis ongoing. n/a not applicable

3. Renewable Energy Targets & Trajectories

3.1. National Overall Target

Table 2: National overall target for the share of final consumption of energy from renewable sources in gross final consumption of energy in 2005 and 2020

(A) Share of energy from renewable sources in gross final consumption of energy in 2005 (S2005) (%)	0
(B) Target of energy from renewable sources in gross final consumption of energy in 2020 (S2020) (%)	15
(C) Expected total adjusted energy consumption in 2020 (ktoe)	34.4 / 21.1*
(D) Expected amount of energy from renewable sources corresponding to the 2020 target (ktoe)	4.5**

* Under normal and additional energy efficiency scenarios respectively, not including transport for which data is not yet available.
**Value corresponds to 22% of electricity consumption, and 15% of all energy consumption, from the Gibraltar Renewable Energy Strategy.

3.2. Sectoral targets & trajectories

Table 3: National 2020 target and estimated trajectory of energy from renewable sources in electricity and transport

(%)	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
RES-E	0	0	0	0	0	0	0.9	2.6	8.9	17.0**	20.0	22.0
RES-T	0	0	0	0	0	0	*	*	*	*	*	*
Overall RES share	0	0	0	0	0	0	0.6	1.6	6	11.5**	13.5	15
Of which from co-operation mechanism	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Surplus for co-operation mechanism	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

	2011-2012	**2013-2014**	**2015-2016**	**2017-2018**	**2020**
RES minimum trajectory (%)	0	0	1.6	11.5**	15
RES minimum trajectory (ktoe)	0	0	0.47	3.2**	4.47

*Values unknown at present. However, the 15% of all energy consumption target is anticipated to be met entirely through renewable energy production for use in non-transport (e.g. buildings). Gains in the transport sector are targeted, and expected to be additional to the 15% target.
**The spike in 2018 reflects the planned installation of a 3 MW offshore wind turbine (which has a large impact in an approx. 35MW system) in 2018.
N/A: not applicable

Table 4a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(A) Expected gross final consumption of RES for heating and cooling	Not applicable to Gibraltar: all heating and cooling is based on electricity consumption											
(B) Expected gross final consumption of electricity from RES	0	0	0	0	0	Nominal	0.15	0.48	1.63	3.24	3.93	4.47
(C) Expected final consumption of energy from RES in transport	0	0	0	0	0	0	*	*	*	*	*	*
(D) Expected total RES consumption	0	0	0	0	0	Nominal	0.15**	0.48**	1.63**	3.24**	3.93**	4.47**
(E) Expected transfer of RES from other Member States and 3rd countries	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
(F) Expected transfer of RES to other Member States	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
(G) Expected RES consumption adjusted for target (D)-(E)+(F)	0	0	0	0	0	Nominal	0.15**	0.48**	1.63**	3.24**	3.93**	4.47**

* Values unknown at present; HMGOG is anticipating completion of the Sustainable Traffic, Transport and Parking Plan in 2015. However, the 15% of all energy consumption target is anticipated to be met entirely through renewable energy production for use in non-transport (e.g. buildings). Gains in the transport sector are targeted, and expected to be additional.

** Values do not include RE in transport, for which data have not yet been compiled.

N/A: not applicable

Table 4b: Calculation table for the renewable energy in transport share (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Expected RES consumption in transport	0	0	0	0	0	0	*	*	*	*	*	*
(H) Expected RES electricity in road transport	0	0	0	0	0	0	*	*	*	*	*	*
(I) Expected consumption of biofuels from wastes, residues, non-food cellulosic and lingo-cellulosic material in transport	0	0	0	0	0	0	*	*	*	*	*	*
(J) Expected RES contribution to transport for the RES-T target: **I+(2.5-1)x(H)+(2-1)x(I)**	0	0	0	0	0	0	*	*	*	*	*	*

* Values unknown at present. However, the 15% of all energy consumption target is anticipated to be met entirely through renewable energy production for use in non-transport (e.g. buildings). Gains in the transport sector are targeted, and expected to be additional.

4. Measures for achieving the targets

4.1. Overview of all policies and measures to promote the use of energy from renewable resources

Table 5: Overview of all policies & measures

Name and reference of the measure	Type of measure	Expected Result	Targeted group or activity	Existing or planned	Start and end dates of the measure
Premium PPAs offered to developers of RE projects	Financial	Near-term deployment of solar PV, SWH, wind, and wave energy projects; longer-term deployment of tidal stream technology.	Renewable energy developers / investors; technology demonstrators.	Existing	2014 – onwards
Solar Thermal and PV pilot projects	Pilot projects	Encourage development and uptake of solar technologies.	Renewable energy developers/ investors; technology demonstrators.	Existing	2014 – onwards
Solar powered street lighting in new car parks	Pilot projects	Encourage development and uptake of solar technologies; reduced dependence on the grid.	Renewable energy developers/ investors; technology demonstrators.	Existing	2014 – onwards
Public awareness campaigns (renewable energies / energy efficiency)	Soft	Public interest in RE installation; reduced electricity consumption.	General public, businesses, households.	Existing	2010 – onwards
Removal of import duty on micro-renewable technologies	Financial	Encourage uptake of best available micro-renewable technology	Technology providers, end-users.	Existing	Completed
Tax allowance for residential solar thermal or PV systems	Financial	Uptake of residential scale solar thermal and PV	Residential scale installers of solar thermal or PV	Existing	2014 – onwards
Soft loans for housing estates for solar thermal or PV systems	Financial	Uptake of solar technology	Residential estate scale installers of solar thermal or PV.	Existing	2014 – onwards
Energy Efficiency National Fund	Financial	Offer loans and/ or grants to a broader section of the community	General public, businesses, households.	Planned	2015 – onwards
Upgrades to the existing electricity grid to allow for	Physical	Encourage development and uptake of solar	Gibraltar Electricity	Existing	2014 – ongoing

the connection of renewable energy		renewable technologies and reduce dependence on the grid.	Authority, RE developers/ investors.		
Energy Performance of Buildings Directive	Regulatory	Greater use of micro-renewables in new large developments	Developers, general public	Planned	2010 – ongoing
Removal of import duty on electric vehicles	Financial	Greater uptake of electric vehicles	General public	Existing	2010 – ongoing
Promotion of electric & hybrid vehicles	Soft	Behavioural change	General public	Planned	2010 – ongoing
Inclusion of electric charging points in all new car parks, housing estates	Pilot projects	Greater uptake of electric vehicles	General public	Existing	2014 - onwards
Biofuel substitution	Soft	Greater use of biodiesel in local market – 10% share of road fuel sold by 2020	Suppliers, end-users	Planned	2015 – onwards
GIS mapping programme of roof tops for PV and solar Thermal	Soft	Development of solar thermal and PV	RE developers/ investors;	Existing	2014 - Ongoing
Sustainable Business Award, Green Innovation Award and Green Lifetime Achievement Award	Soft	To encourage greener business practices, environmental product innovation and recognition for environmental achievements	Businesses, general public, renewable energy developers.	Planned	2015 – Ongoing

4.2. Specific measures to fulfill the requirements under Articles 13, 14, 16 and Articles 17 to 21 of Directive 2009/28/EC

4.2.1. Administrative procedures and spatial planning

When answering the following questions, Member States are requested to explain current national, regional and local rules concerning the authorisation, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating or cooling from renewable sources and to the process of transformation of biomass into biofuels or other energy products. Where further steps are necessary to ensure that procedures are proportionate and necessary, Member States are requested to also describe planned revisions, expected results and the authority responsible to carry out such revisions. Where information is technology specific, please indicate it. When regional/local authorities have a substantial role, please also explain it.

(a) List of existing national and, if applicable, regional legislation concerning authorisation, certification, licensing procedures and spatial planning applied to plants and associated transmission and distribution network infrastructure:

Gibraltar has a total surface area of approximately 6.7 square kilometres, much of which is taken up by the Rock itself. Space for development is therefore limited, and applications to develop renewable energy at scale are addressed on a case-by-case basis, rather than being addressed by a single over-arching regulation or set of regulations.

The Gibraltar Development Plan of 2009 (which is currently under revision) contains two relevant policies in regard to residential renewable energy: Policy GDS12 '*Practical Evaluation of Micro-Renewables';* and Policy GDS13 '*Government Projects – Energy Efficiency/Micro Renewable Technology*'.

- GDS12 – The Development and Planning Commission shall encourage those Government departments, agencies or authorities that would be involved in the practicalities of micro renewable technologies to investigate how best to accommodate these.

- GDS13 – The Development and Planning Commission shall encourage the Government to give due consideration to the use of energy efficient measures and/ or the use of micro-renewable technologies in public development and infrastructure projects.

Other relevant sections of the Gibraltar Development Plan include Policy UW4 – Renewable Energy Schemes, which sets out the parameters for the permitting conditions for renewable energy projects.

The Gibraltar Electricity Authority facilitates the connection of renewable energy plants, with either dedicated new cable or local reinforcement.

(b) Responsible Ministry and its competences in the field:

The Ministry for Health, Environment, Energy and Climate Change, is responsible for overseeing all utility providers in Gibraltar, which includes electricity and potable water companies.

(c) Revision foreseen with the view to take appropriate steps as described by Article 13(1) of Directive 2009/28/EC by: [date]

The spatial planning and authorisation of renewable energy plants will continue to be addressed on a case-by-case basis, to ensure maximum deployment of renewable energy. However this process is supported by a highly detailed GIS mapping programme. This programme maps all potential deployment sites to optimise use of limited space and to maximise energy output. The programme focuses on solar PV and SWH deployment in particular, although sites for all relevant RE technologies are included. For example, the programme details roof space, elevation, inclination and orientation, as well as proximity to the grid network.

(d) Summary of existing and planned measures at regional/local levels (where relevant)

Gibraltar is a single locale for planning purposes. All applications for the deployment of renewable energy will be filtered and assessed through the planning process and authorisation granted through the Development and Planning Commission.

(e) Are there unnecessary obstacles or non-proportionate requirements detected related to authorisation, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating or cooling from renewable sources, and to the process of transformation of biomass into biofuels or other energy products? If so, what are they?

The Gibraltar Development Plan of 2009 and the Environment (Energy Performance of Buildings) Regulations of 2012, require that all new building developments and buildings undergoing major renovation consider the inclusion of renewable energy. At present it is being considered to strengthen this requirement, to an obligation to include in all new developments sufficient renewable energy capacity to meet a proportion of the building's estimated electrical consumption.

At present, all new buildings must meet minimum energy performance requirements, which are equivalent to a "B" energy rating (Energy Performance Certificates). Nevertheless, the Government encourages all new developments to achieve an "A" rating. The inclusion of renewable energy helps obtain an "A" rating. This is proving to be a powerful incentive to developers of major new developments in Gibraltar.

(f) What level of administration (local, regional, national) is responsible for authorising, certifying and licensing renewable energy installations and for spatial planning? (If it depends on the type of installation please specify.) If more than one level is involved, how is coordination between the different levels managed? How will coordination between different responsible authorities be improved in the future?

The Development and Planning Commission (DPC) is the responsible body for all planning applications. HMGOG consults the DPC for advice and recommendations, but has ultimate authority over its own premises. Key departments feed into the planning process and provide conditions to the consent procedure. The Department of the Environment, the Environmental Agency and the GEA are the responsible authorities for certifying, overseeing and licensing renewable energy installations.

(g) How is it ensured that comprehensive information on the processing of authorisation, certification and licensing applications and assistance to applicants made available? What information and assistance is available to potential applicants for new renewable energy installations on their applications?

Information is provided by the Development and Planning Commission (which is an open forum) and the Town Planning Department. The latter consults the Department of the Environment and the GEA on all building applications. Preferential rate loans and tax allowances are available for solar thermal and PV projects (see Table 5). For further information, see:

http://www.thinkinggreen.gov.gi/index.php/resources/energy/157-government-incentives

(h) How is horizontal coordination facilitated between different administrative bodies, responsible for the different parts of the permit? How many procedural steps are needed to receive the final authorisation/licence/permit? Is there a one-stop shop for coordinating all steps? Are timetables for processing applications communicated in advance? What is the average time for obtaining a decision for the application?

The Department for Town Planning coordinates all responses on buildings applications which are then tabled at the Development and Planning Commission for final approval. Lead time is usually around four weeks.

(i) Do authorisation procedures take into account the specificities of the different renewable energy technologies? If so, please describe how. If they do not, do you envisage taking them into account in the future?

Solar PV and SWH are handled as per (g) above. Other technologies are dealt with on case-by-case basis by HMGOG. The Department of the Environment, Town Planning and the GEA, consult on each renewable energy proposal made to Government.

(j) Are there specific procedures, for example simple notification, for small-scale decentralised installations (such as solar panels on buildings or biomass boilers in buildings)? If so, what are the procedural steps? Are the rules publicly available to citizens? Where are they published? Is the introduction of simplified notification procedures planned in the future? If so, for which types of installation/system? (Is net metering possible?)

Small-scale proposals for solar panels would normally require planning permission. The Government has requested the DPC sub-committee to deal with such applications as far as possible in order to speed up the process. There is no special application form for such proposals and the same requirements under the Town Planning Act apply, such as notification of the application to owners. Site notices are only required for certain categories of development and simple solar panel installations are unlikely to fall under these. However, if the array is more than 4m in height then site notices and notices in the press would be required. The Town Planning web page has information and guidance on submitting planning applications.

(k) Where are the fees associated with applications for authorisation/licences/permits for new installations published? Are they related to the administrative costs of granting such permits? Is there any plan to revise these fees?

The fees for planning applications are contained in the Town Planning (General Procedures) Regulations 2001 which are publicly available at:

http://www.gibraltarlaws.gov.gi/articles/2001s025.pdf

(l) Is official guidance available to local and regional administrative bodies on planning, designing, building and refurbishing industrial and residential areas to install equipments and systems using renewable energy sources in electricity and heating and cooling, including in district heating and cooling? If such official guidance is not available, how and when will this need be addressed?

There is reference to encouraging renewable energy technologies in the Development Plan (see policies GDS11, 12 and 13 of the Plan). Additionally, there is further guidance under the Environment's Thinking Green Website and this will be further expanded upon in the Energy Efficiency website, which is in development.

(m) Are there specific trainings for case handlers of authorisation, certification and licensing procedures of renewable energy installations?

Currently there are none in place.

4.2.2. Technical specifications

(a) to benefit from support schemes do renewable energy technologies need to meet certain quality standards? If so, which installations and what quality standards? Are there national, regional standards that go beyond European standards?

HMGOG requires any and all renewable energy technology to be installed locally to conform to the latest European standards at the time of installation.

4.2.3. Buildings

Please note that when referring to increasing the use of renewable energy sources in buildings, the supply of renewable electricity from the national grid should not be considered. The focus here is on increasing local supply of heat and/or electricity to individual buildings. The direct supply of heat or cooling through district heating and cooling in buildings could also be taken into account.

(a) Reference to existing national and regional legislation (if any) and summary of local legislation concerning the increase of the share of energy from renewable sources in the building sector:

All new buildings and large buildings undergoing major renovations must comply with the requirements of the Environment (Energy Performance of Buildings) Regulations 2012, which transposes Directive 2010/31/EU on the Energy Performance of Buildings. This includes a minimum energy performance requirement, as well as a requirement for large buildings of over 1000m^2 to consider alternative energy technologies during the design stage.

(b) Responsible Ministry(/ies)/authority(/ies):

The Department of the Environment within the Ministry of Health, Environment, Energy and Climate Change.

(c) Revision of rules, if any, planned by: [date]

All revision of rules to date have been carried out and implemented locally.

(d) Summary of existing and planned measures at regional/local levels:

The Government of Gibraltar is and will continue to implement a series of measures locally. Measures include the Green Building Programme for Government Buildings (and subsequently those in the private sector); the phased installation of solar thermal systems for hot water provision

to public buildings, including sporting facilities and schools; and a programme of public building refurbishment which includes installation of LED lighting, smart metering, double glazing and external cladding. In the financial sphere the Government is providing tax relief for the installation of solar thermal heating systems and a grant scheme for individuals undertaking building improvements. The Government is also considering the establishment of an energy efficiency reporting scheme for the commercial sector, together with a survey of all building stock.

(e) Are there minimum levels for the use of renewable energy in building regulations and codes? In which geographical areas and what are these requirements (Please summarise.) In particular, what measures have been built into these codes to ensure the share of renewable energy used in the building sector will increase? What are the future plans related to these requirements/measures?

At present the inclusion of a specific share of renewable sources within new buildings has been addressed within legislation through the Environment (Energy Performance of Buildings) Regulations 2012. Developers are required to provide an assessment for alternative energy systems at the project proposal stage to the Department of the Environment prior to project approval. The Government encourages all new developments to achieve an "A" rating. The inclusion of renewable energy helps obtain an "A" rating. This is proving to be a powerful incentive to developers of major new developments in Gibraltar. Government promotes, and where appropriate, requires the inclusion of renewable energy technologies in new builds.

(f) What is the projected increase of renewable energy use in buildings until 2020? (If possible differentiating between residential – "single unit" and "multiple unit", commercial public and industrial.) (To answer this question you may use a table as Table 6 below. Data could be given yearly or for selected years. Both heating and cooling and electricity consumption from renewable energy sources should be included.) ?

Table 6: Estimated share of renewable energy in the building sector (%)

	2005	2010	2015	2020
All buildings	0	0	0.9	22%*

* Equivalent to the 22% of electricity target, which, in turn, equates to the 15% of energy target. See Table 3.

(g) Have obligations for minimum levels of renewable energy in new and newly refurbished buildings been considered in national policy? If so, what are these levels? If not, how will the appropriateness of this policy option be explored by 2015?

These have been incorporated into Gibraltar Government policy. HMGOG is currently going trough a massive building renovation programme for Government housing estates and renewable energy is being considered and where feasible installed. Through the implementation of the Environment (Energy Performance of Buildings) Regulations 2012, renewable energy has to be considered in new and newly refurbished buildings in order to minimise their energy consumption from non-renewable sources.

(h) Please describe plans for ensuring the exemplary role of public buildings at national, regional and local level by using renewable energy installations or becoming zero energy buildings from 2012 onwards? (Please take into account the requirements under the EPBD)

The Government is currently working towards installing photovoltaic panels on the roof of the newly developed airport terminal. All other Government buildings are currently being considered for the installation of solar thermal and photovoltaic panels. A GIS mapping programme is currently being undertaken by the Department of the Environment to highlight available roof space for the implementation of solar renewable technologies. These areas would then be allocated and distributed to interested developers, thereby ensuring a rapid dissemination of these technologies.

(i) How are energy efficient renewable energy technologies in buildings promoted?

Developers are encouraged to make their designs as energy efficient and environmentally friendly as possible during the design stage, including via the use of renewable energy technologies. This is part of the planning application process.

The Department of the Environment offered an Environmental and Sustainable Construction Course, both to the public and private sector in 2014, to raise awareness on sustainable construction practices, which included renewable energy technologies. In 2014 the Department also launched an Energy Efficiency Campaign and is working towards developing an energy efficiency website.

4.2.4. Information provisions

Current and future information and awareness raising campaigns and programmes, as well as planned revisions and expected results have to be described. Member States should also indicate which responsible authority will monitor and review the effect of the programmes. When regional/local authorities have a substantial role please also indicate and summarise it.

(a) Reference to existing national and/or regional legislation (if any) concerning information requirements according to Article 14 of Directive 2009/28/EC:

The Freedom of Access to Information on the Environment (Amendment) Regulations 2014 and The Environment (Energy Efficiency) Regulations 2013.

All of HM Government of Gibraltar Laws are available online at http://www.gibraltarlaws.gov.gi/

(b) Responsible body(/ies) for dissemination of information at national/regional/local levels:

The Department of the Environment is responsible for the dissemination of information.

(c) Summary of existing and planned measures at regional/local levels (where relevant):

In 2014 the Department of the Environment embarked upon an Energy Efficiency Awareness Campaign, to raise general awareness of energy efficiency measures and renewable energies. The Department of the Environment also has two websites, the Government Departmental website and the Thinking Green website, where further information can be found (see https://www.gibraltar.gov.gi/environment/environment and http://www.thinkinggreen.gov.gi/).

The Department of the Environment is also working towards developing a website dedicated to Energy Efficiency; as per the National Energy Efficiency Action Plan (NEEAP).

All plans prepared by the Department of the Environment, such as the NEEAP and the Environmental Action and Management Plan are publicly available documents.

(d) Please indicate how information is made available on supporting measures for using renewable energy sources in electricity, heating and cooling and in transport to all relevant actors (consumers, builders, installers, architects, suppliers of relevant equipment and vehicles). Who is responsible for the adequacy and the publishing of this information? Are there specific information resources for the different target groups, such as end consumers, builders, property managers, property agents, installers, architects, farmers, suppliers of equipment using renewable energy sources, public administration? Are there information campaigns or permanent information centres in the present, or planned in the future?

Any interested parties are able to contact the Department of the Environment directly with any requests for information. Further information is also available on the Environment's Departmental website and Thinking Green website (see https://www.gibraltar.gov.gi/environment/environment and http://www.thinkinggreen.gov.gi/).

Further information regarding renewables will also be included in the Energy Efficiency website.

(e) Who is responsible for publishing information on the net benefits, costs and energy efficiency of equipment and systems using renewable energy sources for heating, cooling and electricity? (Supplier of the equipment or system, public body or someone else?)

HMGOG provides this information to promote the uptake of renewable energy technologies.

(f) How is guidance for planners and architects provided to help them to properly consider the optimal combination of renewable energy sources, high efficiency technologies and district heating and cooling when planning, designing, building and renovating industrial or residential areas? Who is responsible for that?

Guidance can be obtained from the Town Planning Department as well as the Department of the Environment.

The Department of the Environment offered an Environmental and Sustainable Construction Course both to the public and private sector in 2014 to raise awareness on Sustainable Construction practices, which included renewable energy technologies. The Department of the Environment is also planning on offering another course in Energy Auditing.

(g) Please describe the existing and planned information, awareness raising and training programmes for citizens on the benefits and practicalities of developing and using energy from renewable sources. What is the role of regional and local actors in the designing and managing these programmes?

The Government of Gibraltar has launched a public awareness campaign advising the general public of its plans for renewable energy projects and the benefits it hopes this will bring to Gibraltar and any other information deemed relevant such as energy efficiency measures etc.

4.2.5. Certification of installers

(a) Reference to existing national and/or regional legislation (if any) concerning certification or equivalent qualification schemes for installers according to Article 14(3) of the Directive 2009/28/EC:

There is no relevant certification scheme in place in Gibraltar. European schemes are used.

(b) Responsible body/(ies) for setting up and authorising certification/qualification schemes by 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps:

Not applicable in Gibraltar's case – please see (a) above. Such schemes are however managed under the planning process, with input and recommendations provided by the Department of the Environment and the GEA.

(c) Are such certification schemes/qualifications already in place? If so, please, describe.

Not applicable in Gibraltar's case – see (a) above.

(d) Is information on these schemes publicly available? Are lists of certified or qualified installers published? If so, where? Are other schemes accepted as equivalent to the national/regional scheme?

Not applicable in Gibraltar's case – see (a) above.

(e) Summary of existing and planned measures at regional/local levels (where relevant).

Not applicable in Gibraltar's case – see (a) above.

4.2.6. Electricity infrastructure development (Article 16(1) and Article 16(3) to (6) of Directive 2009/28/EC)

Besides the current situation and already existing legislation for future actions, planned revisions, responsible bodies for it and expected results have to be described.

(a) Reference to existing national legislation concerning requirements related to the energy grids (Article 16):

The 11,000 volts electrical distribution network in Gibraltar operates in "island mode" and is controlled by a single operator, the Gibraltar Electricity Authority, on behalf of HMGOG in accordance with the Gibraltar Electricity Authority Act 2003.

(b) How is it ensured that transmission and distribution grids will be developed with a view to integrating the targeted amount of renewable electricity while maintaining the secure operation of the electricity system? How is this requirement included in the transmission and distribution operators' periodical network planning?

The Gibraltar Electricity Authority (GEA) is responsible for both generation and distribution of electricity in Gibraltar, the integration of renewables therefore forms an integral part of the overall planning in the development of the electrical network infrastructure. The GEA is the authority for all electrical matters in Gibraltar and is directly involved in assessing all renewable projects that feed into the electrical distribution network. This allows the Authority to work directly with

renewable providers in order to co-ordinate and ensure that renewables projects are able to be fully integrated into the distribution network. Whilst at the same time also ensuring that they deliver the required quality, robustness and reliability, and that they can operate in parallel with the generation of electricity from other non-renewable sources

(c) What will be the role of intelligent networks, information technology tools and storage facilities? How will their development be ensured?

As part of the replacement of the existing power stations there exists a parallel project to upgrade the main distribution centres; which will include an upgrade of the existing Supervisory Control and Data Acquisition (SCADA) and this will be linked to the laying of a fibre network to develop smart network. This approach forms part of the GEA electrical distribution network development 15-year program in conjunction with HMGOG.

(d) Is the reinforcement of the interconnection capacity with neighbouring countries planned? If so, which interconnectors, for which capacity and by when?

At present there are no immediate plans to interconnect into neighbouring countries.

(e) How is the acceleration of grid infrastructure authorisation procedures addressed? What is the current state and average time for getting approval? How will it be improved? (Please refer to current status and legislation, bottlenecks detected and plans to streamline procedure with timeframe of implementation and expected results.)

This is not applicable. Any requirement to expand the electrical distribution network requires only GEA approval. The process is therefore a streamlined procedure, which subject to funding being available, can be delivered quickly.

(f) How is coordination between grid infrastructure approval and other administrative planning procedures ensured?

This is not applicable as GEA is the sole operator for generation and distribution. The only external administrative approval that may be required is if the project falls under the remit of the Town Planning Regulations.

(g) Are priority connection rights or reserved connection capacities provided for new installations producing electricity from renewable energy sources?

One of the GEA priorities, in conjunction with HMGOG, is working together to achieve a minimum of 22% of electricity generated in Gibraltar from renewable sources by 2020. This, in conjunction with strong vertical integration in the decision-making process, results in a de-facto priority on the deployment of RE capacity.

(h) Are any renewable installations ready to come online but not connected due to capacity limitations of the grid? If so, what steps are taken to resolve this and by when is it expected to be solved?

Not at present. GEA in conjunction with HMGOG will invest in the development of the electrical network infrastructure to ensure that all viable renewable energy projects that have been approved can be connected to the distribution network.

(i) Are the rules on cost sharing and bearing of network technical adaptations set up and published by transmission and distribution system operators? If so, where? How is it ensured that these rules are based on objective, transparent and non-discriminatory criteria? Are there special rules for producers located in peripheral regions and regions with low population density? (Cost bearing rules define which part of the costs is covered by the generator wishing to be connected and which part by the transmission or distribution system operator. Cost sharing rules define how the necessary cost should be distributed between subsequently connected producers that all benefit from the same reinforcements or new lines.)

This is not applicable in Gibraltar. The GEA is the single operator and maintainer of the electrical distribution network that transmits electrical power. The Gibraltar Electricity Authority Act 2003 makes provision for commercial entities requiring electrical energy, to have to initially contribute for the provision of the electrical supply. The contribution is dependent on the load requirements to be provided by the GEA. Once the electrical infrastructure is provided the GEA becomes responsible for the future upkeep and replacement of the electrical infrastructure.

(j) Please describe how the costs of connection and technical adaptation are attributed to producers and/or transmission and/or distribution system operators? How are transmission and distribution system operators able to recover these investment costs? Is any modification of these cost bearing rules planned in the future? What changes do you envisage and what results are expected? (There are several options for distributing grid connection costs. Member States are likely to choose one or a combination of these. According to the "deep" connection cost charging the developer of the installation generating electricity from renewable energy sources bears several grid infrastructure

related costs (grid connection, grid reinforcement, and extension). Another approach is the "shallow" connection cost charging, meaning that the developer bears only the grid connection cost, but not the costs of reinforcement and extension (this is built into the grid tariffs and paid by the customers). A further variant is when all connection costs are socialised and covered by the grid tariffs.)

This is not applicable in Gibraltar. The GEA is the single operator and maintainer of the electrical distribution network that transmits electrical power. The Gibraltar Electricity Authority Act 2003 makes provision for commercial entities requiring electrical energy, to have to initially contribute for the provision of the electrical supply. The contribution is dependent on the load requirements to be provided by the GEA. Once the electrical infrastructure is provided, the GEA is responsible for the future upkeep and replacement of this electrical infrastructure.

With reference to renewable energy projects, HMGOG and the GEA, will agree with the renewable provider a demarcation point. The cost of connection from this point to the renewable energy generation plant is payable by the renewable energy provider. The cost of connection from this demarcation point upstream to the electrical distribution network is funded and paid for by HMGOG / GEA.

The existing policy is that the cost of any future network development and reinforcement of the network will be funded by the GEA / HMGOG.

(k) Are there rules for sharing the costs between initially and subsequently connected producers? If not, how are the benefits for subsequently connected producers taken into account?

Not applicable as the GEA is the sole energy producer in Gibraltar.

(l) How will it be ensured that transmission and distribution system operators provide new producers wishing to be connected with the necessary information on costs, a precise timetable for processing their requests and an indicative timetable for their grid connection?

If HMGOG and GEA approve the connection into the network, GEA will agree with the renewable provider a demarcation point to connect into the electrical distribution network. The cost of connection from this point to the renewable energy generation plant is payable by the renewable energy provider. The cost of connection downstream from this demarcation point to the electrical distribution network is currently funded and paid by HMGOG / GEA.

4.2.7. Electricity network operation (Article 16(2) and Article 16(7) and (8) of Directive 2009/28/EC)

(a) How is the transmission and distribution of electricity from renewable energy sources guaranteed by transmission and distribution system operators? Is priority or guaranteed access ensured?

This is not applicable to Gibraltar. Once the connection of a renewable energy project has been approved and connected to the electrical distribution network, the GEA will guarantee transmission and distribution and will only be interrupted subject to availability. The electrical energy demand and the source of renewable energy must meet the required quality of supply in order to ensure the stability and reliability of the electrical supplies to consumers.

(b) How is it ensured that transmission system operators, when dispatching electricity generating installations give priority to those using renewable energy sources?

The GEA as the sole generation and distribution operator of electrical energy will give priority to electrical energy produced from renewable sources subject to the electrical demand. Additionally, the source of renewable energy must conform to the required quality of supply to ensure the stability and reliability of the electrical supplies to consumers.

(c) How are grid- and market-related operational measures taken in order to minimise the curtailment of electricity from renewable energy sources? What kinds of measures are planned and when is implementation expected? (Market and grid design that enable the integration of variable resources could cover measures such as trading closer to real time (changing from day-ahead to intra-day forecasting and rescheduling of generators), aggregation of market areas, ensuring sufficient cross border interconnection capacity and trade, improved cooperation of adjacent system operators, the use of improved communication and control tools, demand-side management and active demand-side participation in markets (through two-way communication systems — smart metering), increased distributed production and domestic storage (e.g. electric cars) with active management of distribution networks (smart grids).)

There are no market operational influences that impact on how the GEA generates and distributes electricity other than the cost of fuel. The provision of renewable electrical energy at ‘zero’ fuel cost will always be a preferred option. This option is provided through fixed tariff Power Purchase Agreements.

(d) Is the energy regulatory authority informed about these measures? Does it have the competence to monitor and enforce implementation of these measures?

There is no independent energy regulating authority as such. In Gibraltar the GEA, through the Gibraltar Electricity Authority Act 2003, is the competent body that has these responsibilities. The GEA Board monitors and implements on behalf of HMGOG the requirements of the Act.

(e) Are plants generating electricity from renewable energy sources integrated in the electricity market? Could you please describe how? What are their obligations regarding participation in the electricity market?

There is no energy market in Gibraltar. Renewable energy producers deliver electrical energy through direct Power Purchase Agreements with GEA / HMGOG.

(f) What are the rules for charging transmission and distribution tariffs to generators of electricity from renewable energy sources?

This is not applicable under the Power Purchase Agreements. The GEA as the owner and operator of the electrical distribution network will not charge the producer of renewable energy for any associated transmission or distribution costs.

4.2.8. Biogas integration into the natural gas network

Not applicable, Gibraltar does not have a natural gas network therefore integration of biogas is not possible.

(a) How is it ensured that the charging of transmission and distribution tariffs does not discriminate against gas from renewable energy sources?

(b) Has any assessment been carried out on the need to extend the gas network infrastructure to facilitate the integration of gas from renewable sources? What is the result? If not, will there be such an assessment?

(c) Are technical rules on network connection and connection tariffs for biogas published? Where are these rules published?

4.2.9. District heating & cooling infrastructure development

(a) Please provide an assessment of the need for new district heating and cooling infrastructure using renewable energy sources and contributing to the 2020 target. Based on this assessment are there plans to promote such infrastructures in the future? What are the

expected contributions of large biomass, solar and geothermal facilities in the district heating and cooling systems?

There are no plans to develop a district heating and/or cooling scheme at this time. Heating and cooling at present is entirely derived from electricity; and residentidal heating and cooling is done on a single household basis. It is expected that shifting electricity production away from diesel fuels to renewable energy, and in particular solar PV, in the short term, offers the greatest opportunity for gains in renewable energy share.

4.2.10. Biofuels & other bioliquids – sustainability criteria and verification of compliance

The following part of the action plan should explain Member States' future strategy regarding fulfilment of the sustainability criteria for biofuels and bioliquids and verification of compliance with the scheme.

(a) How will the sustainability criteria for biofuels and bioliquids be implemented at national level? (Is there legislation planned for implementation? What will be the institutional setup?)

There is at present no biofuel production in Gibraltar, given a negigible feedstock. With regards to potential imports, preference will be given to sustainably sourced biofuels. Legislation in this respect is the Environment (Promotion of Energy Produced from Renewable Sources) Regulations 2011.

(b) How will it be ensured that biofuels and bioliquids that are counted towards the national renewable target, towards national renewable energy obligations and/or are eligible for financial support comply with the sustainability criteria set down in Article 17(2) to (5) of Directive 2009/28/EC? (Will there be a national institution/body responsible for monitoring/verifying compliance with the criteria?)

The Department of the Environment will be responsible for monitoring/verifying compliance with the criteria set down in Article 17(2) to (5) of Directive 2009/28/EC. Biofuels and bioliquids that are counted towards national renewable energy obligations, will have to be accompanied by proper certification from the producer/exporting country/Member state.

(c) If a national authority/body will monitor the fulfilment of the criteria, does such a national authority/body already exist? If so, please specify. If not, when is it envisaged to be established?

See (b) above.

(d) Please provide information on the existence of national law on land zoning and national land register for verifying compliance with Article 17(3) to (5) of Directive 2009/28/EC. How economic operators can access to this information? (Please provide information on the existence of rules and distinction between different land statuses, like biodiversity area, protected area etc; and on the competent national authority who will monitor this land register and changes in land status.)

Gibraltar has no land likely to be suitable at any time for the production of biofuels. As such, there is no specific legislation relating to land zoning for this purpose. The Development Plan 2009 identifies acceptable usage of all land in Gibraltar. This plan is available online: http://www.gibdevplan.gov.gi/index.html

Any changes to land use status would be under the authority of the Town Planning Department.

(e) As far as protected areas are concerned, please provide information under which national, European or international protection regime they are classified.

The Rock of Gibraltar SAC/SPA and the Southern Waters of Gibraltar SAC/SPA are both designated under the Habitats Directive and are therefore part of the Natura 2000 network. These sites are also protected locally under the Nature Protection Act 1991.

(f) What is the procedure for changing the status of land? Who monitors and reports at national level on land status changes? How often are the land zoning register updated (monthly, annually, bi-annually, etc.)?

The Development Plan allocates certain sites for specific uses but the Government takes decisions on an ad hoc basis as to potential uses of land. The Development Plan is reviewed on a 5 yearly basis. Material changes in land, require planning permission and this is done through the planning application process.

(g) How is compliance with good agro-environmental practices and other cross-compliance requirements (required by Article 17(6) of Directive 2009/28/EC) ensured and verified at national level?

Not applicable, Gibraltar has no agricultural land, therefore the production of biofuels / bioliquids is not feasible.

(h) Do you intend to help develop voluntary "certification" scheme(s) for biofuel and bioliquid sustainability as described in the second subparagraph of Article 18(4) of Directive 2009/28/EC? If so, how?

Gibraltar has no agricultural land available for the production of biofuels / bioliquids. Any imported biofuels will be certified appropriately and verified by the Department of the Environment.

4.3. Support Schemes to Promote the Use of Energy From Renewable Sources in Electricity

Support schemes can be regulatory, providing for targets and/or obligations. They may provide financial support either for investment or during the operation of a plant. There are also soft measures like information, education or awareness-raising campaigns. As soft measures are described above, this assessment should focus on regulatory and financial measures.

Please describe existing measures with legal reference, details of the scheme, duration (indicating start and end dates), past impact and explain whether any reform or future schemes are planned and by when. What are the expected results?

4.3.1. Regulation

Regulation can set target(s) and obligations. In case there is such an obligation please detail it:

(a) What is the legal basis for this obligation/target?

(b) Are there any technology-specific targets?

(c) What are the concrete obligations/targets per year (per technology)?

(d) Who has to fulfil the obligation?

(e) What is the consequence of non-fulfilment?

(f) Is there any mechanism to supervise fulfilment?

(g) Is there any mechanism to modify obligations/targets?

Energy Performance of Buildings Directive

In addition to the Building (Energy Performance) Rules of 2009, The Energy Performance of Buildings Directive (EPBD) was transposed into Gibraltar legislation via the Environment (Energy Performance of Buildings) Regulations 2012. Under these regulations, all new buildings and large buildings undergoing major renovations must meet minimum energy performance standards. This

includes a requirement for large buildings of over 1000m2, to consider alternative technologies during the design stage. There is no set minimum level for the inclusion of micro-renewables within new buildings or major retrofits, however, Government will continue to expand development legislation to further promote, and where appropriate require, the inclusion of renewable energy technologies.

The Energy Efficiency Directive was transposed via the Environment (Energy Efficiency) Regulations 2013. Under these regulations the Government will ensure that 3% of the total floor area of Government-owned heated or cooled buildings are renovated each year to meet at least minimum energy performance requirements.

The Directive on the Promotion of the use of Energy from Renewable Sources was transposed into Gibraltar legislation via the Environment (Promotion of Energy Produced from Renewable Sources) Regulations 2011. Under these regulations targets are set for the amount of energy to be obtained from renewable sources by 2020, in transport, electricity, heating and cooling.

The enforcement and monitoring of these directives are carried out by the Department of the Environment.

4.3.2. Financial Support

Financial support can be classified in various ways. Examples are:

Financial support for investment, capital grants, low interest loans, tax exemptions or reductions, tax refunds, tender schemes, renewable energy obligations with or without green certificates (tradable green certificates), feed-in tariffs, feed-in premiums, voluntary schemes.

Financial measures to support Large-scale deployment of RE capacity

(a) Name and a short description of the scheme.

Premium PPAs for Renewable Energy Power Plants are awarded on a case-by-case basis, by the Gibraltar Electricity Authority to a developer, subject to satisfactory agreement of a unit price, duration, and other factors by all parties. Technology providers must meet the power quality requirements of the Gibraltar Electricity Authority. Connection cost is shared between GEA and the developer. Any RE technology may be considered, although priority is given to those closer to commercial readiness.

(b) Is it a voluntary or obligatory scheme?

It is a voluntary scheme.

(c) Who manages the scheme? (Implementing body, monitoring authority)

The Ministry of Environment, Health, Energy and Climate Change, in conjunction with the Procurement Office.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

In the Gibraltar Renewable Energy Strategy, HMGOG has modelled the cumulative costs of PPAs accruing to the Government over the period up to 2020 (and 2030). This ensures that at the beginning of each financial period, adequate funds can be set aside to cover the outlay anticipated. In addition, developer/investor consortia are required to propose a unit cost that falls under a ceiling value.

(e) How is long-term security and reliability addressed by the scheme?

PPAs are awarded for a period of twenty years, in line with developer requirements gleaned in consultation with the latter.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

PPAs are negotiated on a case-by-case basis, in order to ensure that technology cost reductions, are taken account of for overall cost control.

(g) Does support differ according to technology?

PPAs are considered for a range of technologies – solar PV, wind energy, marine current, wave power – and unit price is negotiated according to the commercial reality of the technology in question.

(h) What are the expected impacts in terms of energy production?

HMGOG targets the achievement of a 22% share of electricity production resulting from its Premium PPA approach and other policy measures.

(i) Is support conditional on meeting energy efficiency criteria?

PPAs are considered on a case-by-case basis – in each case the application is measured against best practice technology efficiency benchmarks, included in the Gibraltar Renewable Energy Strategy.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is an existing measure.

(k) Is this a planned scheme? When would it be operational?

As in (j).

(l) What start and end dates (duration) are set for the whole scheme?

It is an open-ended scheme, begun in 2014.

(m) Are there maximum or minimum sizes of system which are eligible?

No, but the MW-scale is targetted.

(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?

The Premium PPA Scheme is the only support scheme in place.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

Not applicable

Financial measures to support Small-scale deployment of RE capacity

(a) What is the name and a short description of the scheme?

There are two financial support schemes currently available. The Tax Allowance for Solar Thermal or PV systems, and soft loans available to residential estates to fund projects that use solar energy to provide electricity for communal lighting, water heating and the powering of lifts.

A future scheme is that of the Energy Efficiency National Fund, whose purpose is to support national energy efficiency initiatives. The intention of the Energy Efficiency National Fund would

be to complement the above mentioned schemes and to offer loans and/ or grants to a broader section of the community than is currently eligible to apply.

(b) Is it a voluntary or obligatory scheme?

These schemes are voluntary and open to the general public, residential estates and Government Departments respectively.

(c) Who manages the scheme? (Implementing body, monitoring authority)

These schemes are managed by HM Government of Gibraltar via the Chief Secretary, the Financial Secretary, the Income Tax Office and the Department of the Environment.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

Estimates are submitted by all Government Departments on a yearly basis to determine funding needs and allocations for each financial year. These projects include all renewable energy projects which are costed and included in the budget for cabinet approval.

(e) How is long-term security and reliability addressed by the scheme?

As (d) above and due to directive requirements to meet such targets.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

These schemes have only been in place for a year or two and will be revised by the Department of the Environment as necessary.

(g) Does support differ according to technology?

The Tax Allowance Scheme and Soft Loan schemes are currently available for solar thermal and PV. The Government fund is open to all projects.

(h) What are the expected impacts in terms of energy production?

The aim is to reduce demand and dependence on the grid.

(i) Is support conditional on meeting energy efficiency criteria?

Applications are decided on a case by case basis.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

Not applicable.

(k) Is this a planned scheme? When would it be operational?

The Energy Efficiency National Fund has been allocated for the next financial year.

(l) What start and end dates (duration) are set for the whole scheme?

These have yet to be defined at the time of writing.

(m) Are there maximum or minimum sizes of system which are eligible?

Currently there are no minimum size restrictions.

(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?

As per (i) above.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

Not applicable.

Import Duty on Renewable Energy Technologies

In addition to the above named measures, there is no Import Duty on Renewable Energy Technologies. HMGoG has removed the import duty on renewable energy technologies, including micro-renewables, in order to make the pricing more favourable and encourage greater uptake within the local market. This is managed by the Gibraltar Customs Office, in conjunction with the Department of the Environment.

4.4. Support schemes to promote the use of energy from renewable resources in heating & cooling

Gibraltar is planning the deployment of solar water heating systems on a number of publicly owned buildings that are also in public use, including primary and secondary schools, the prison, the hospital and old age pensioner homes. The design of the procurement mechanisms to be used is presently under development and deployment is expected for 2015.

4.5. Support schemes to promote the use of energy from renewable resources in transport

Please follow the structure of 4.3 and apply the questions to the support measures provided for renewable energy use in the transport sector. Please make distinctions according to transport modes (such as road transport, non-road land transport). Please address the following additional points:

1. Biofuel Substitution in Fuel Stations

(a) Name and a short description of the scheme.

HMGOG plans to encourage local fuel stations to stock supplies of biodiesel with a view to increasing this amount to 10% of all local fuel by 2020. There is no differentiation of support according to fuel type or technology.

(b) Is it a voluntary or obligatory scheme?

It is expected to be a voluntary scheme.

(c) Who manages the scheme? (Implementing body, monitoring authority)

It will be managed by the Department of the Environment.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

Not applicable.

(e) How is long-term security and reliability addressed by the scheme?

Not applicable.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

The scheme is presently at the planning stage.

(g) Does support differ according to technology?

The scheme targets biodiesel.

(h) What are the expected impacts in terms of energy production?

These data are not yet available.

(i) Is support conditional on meeting energy efficiency criteria?

This is not expected to be a criterion.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is a planned measure.

(k) Is this a planned scheme? When would it be operational?

As in (j).

(l) What start and end dates (duration) are set for the whole scheme?

The scheme is expected to begin in 2015, and to continue indefinitely.

(m) Are there maximum or minimum sizes of system which are eligible?

Not applicable.

(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?

Not applicable.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

Not applicable.

(p) What are the concrete obligations/targets per year (per fuel or technology)?

The target is for 10% of road transport fuel to come from renewable energy sources by 2020.

(q) Is there a differentiation of the support according to fuel types or technologies? Is there any specific support to biofuels which meet the criteria of Article 21(2) of the Directive?

This is still to be decided.

2. Encouragement of electric vehicle uptake

(a) Name and a short description of the scheme.

Reduced import duty on electric vehicles. HMGoG has removed the import duty on electric and hybrid vehicles in order to make the pricing more favourable and encourage greater uptake within the local market. HMGoG will also be investing in the necessary infrastructure to support electric vehicles by setting up electric vehicle charging points at various locations. Two such points have already been earmarked with further potential locations being investigated.

(b) Is it a voluntary or obligatory scheme?

It is an obligatory scheme.

(c) Who manages the scheme? (Implementing body, monitoring authority)

This measure is managed by the Gibraltar Customs Office.

(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?

Not applicable.

(e) How is long-term security and reliability addressed by the scheme?

Not applicable.

(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?

The scheme will be monitored and revised if necessary.

(g) Does support differ according to technology?

All types of electric vehicles are covered by the scheme.

(h) What are the expected impacts in terms of energy production?

These data are not yet available.

(i) Is support conditional on meeting energy efficiency criteria?

All types of electric vehicles are covered by the scheme.

(j) Is it an existing measure? Could you please indicate national legislation regulating it?

It is an existing measure in place since 2010.

(k) Is this a planned scheme? When would it be operational?

As in (j).

(l) What start and end dates (duration) are set for the whole scheme?

In place since 2010 and open-ended.

(m) Are there maximum or minimum sizes of system which are eligible?

Not applicable.

(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?

Not applicable.

(o) Are there regional/local schemes? If so, please detail using the same criteria.

Not applicable.

(p) What are the concrete obligations/targets per year (per fuel or technology)?

This is a voluntary measure. Clarity on the target is anticipated on publication of the Sustainable Traffic, Transport and Parking Plan in 2015.

(q) Is there a differentiation of the support according to fuel types or technologies? Is there any specific support to biofuels which meet the criteria of Article 21(2) of the Directive?

Not applicable.

4.6. Specific measures for the promotion of the use of energy from biomass

Biomass has an important role as primary energy in all the three sectors: heating and cooling, electricity and transport. National biomass strategy is crucial to plan the role and interaction of uses between the energy end uses and interaction with other non-energy sectors. Therefore the Member States are required to assess their domestic potential and increased mobilisation of domestic and imported biomass resources. The impact on and the interaction with other non-energy sectors (as the food and feed industry, pulp and paper industry, construction industry, furniture industry etc.) should be analysed.

4.6.1. Biomass supply: both domestic & trade

Under this point Member States should assess the supply of domestically available biomass and the need for imports.

There should be a distinction between biomass (A) from forestry – (1) direct and (2) indirect supply; (B) from agriculture and fisheries – (1)directly provided and (2) by-products/processed crops; and (C) from waste – biodegradable fraction of municipal solid waste, (2) biodegradable fraction of industrial solid waste and (3) sewage sludge. Data is required for the above-mentioned first sub-categories, while more detailed information is optional. However the aggregated figures shall reflect the following categorisation and give information in the units of Table 7. The role of imports (EU and non-EU) and exports (if possible, EU and non-EU) must be reflected.

Please note that woodchips, briquettes and pellets can be either form direct supply or from indirect supply from forestry. If information on pellets is included in the table, it should specify whether the raw material comes from direct or indirect supply.

In the case of biogas and biofuels the amount of raw feedstock should be detailed in Table 7, not the amount of processed feedstock. It is understood that for imports and exports the amount of biomass feedstocks for biofuels is more difficult to ascertain and estimations may be necessary. Alternatively, if the information on imports is given on the basis of biofuel imports, it must be specified in the table.

Waste to Energy (coded 'C1' above)

Gibraltar established a waste to energy plant to manage municipal solid waste in 2001. This however experienced technical issues from the outset, and was decommissioned. In 2014, HMGOG issued a call for tenders for advanced thermal treatment of waste, from which process electricity may be derived as a by-product. Decision on the tender is expected for 2015. The volume of electricity production from such a plant is as yet unknown.

Waste Water Treatment (coded 'C3' above)

In 2014, HMGOG issued a call for tenders for a sewage treatment facility, from which process pelletised waste may be derived as a by-product. A decision on the tender is expected for 2015.

(Table 7 "Biomass supply in 2006" is not included here as Gibraltar harvests no biomass for the purpose of energy production.)

> Please use Table 7a to give an estimated contribution of biomass energy use in 2015 and 2020 (Following the categorisation used in Table 7.)

Table 7a: Estimated biomass domestic supply in 2015 and 2020

Sector of Origin		2015		2020	
		Expected amount of domestic resource (tonnes)	**Primary energy production (ktoe)**	**Expected amount of domestic resource (tonnes)**	**Primary energy production (ktoe)**
A) Biomass from forestry	**1. Direct supply of wood biomass from forests and other wooded land for energy generation.**	n/a	n/a	n/a	n/a
	2. Indirect supply of wood biomass for energy generation.	n/a	n/a	n/a	n/a
B) Biomass from agriculture and fisheries	**1. Agriculture crops and fishery products directly provided for energy generation.**	n/a	n/a	n/a	n/a
	2. Agricultural by-products/ processed residues and fishery by-products for energy generation.	n/a	n/a	n/a	n/a
C) Biomass from waste	**1. Biodegradable fraction of municipal solid waste including bio-waste** (biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and comparable waste from food processing plants) **and landfill gas.** **2. Biodegradable fraction of industrial waste (including paper, cardboard, pallets).**	15,657	0*	16,092	0.678**
	3. Sewage sludge.	n/a	n/a	n/a	n/a

* The waste to energy plant is currently under tender.

** This is based on a 1MW W2E plant as modelled in the Gibraltar Renewable Energy Strategy.

What is the estimated role of imported biomass up to 2020? Please specify the quantities expected (ktoe) and indicate possible import countries.

No import of biomass for energy production is anticipated.

In addition to the information provided above could you please describe the current situation of agricultural land used for dedicated energy production as follows:

4.6.2. Measures to increase biomass availability

Biomass availability is limited to that resulting from waste streams; these are to be minimised through recycling where possible. Furthermore, Gibraltar's land area being very limited, there is no land suitable for agriculture from which biomass feedstock might be derived, nor the production of energy crops.

The following questions are therefore not applicable to Gibraltar.

Mobilisation of new biomass sources

(a) Please specify how much land is degraded.

(b) Please specify how much unused arable land there is.

(c) Are any measures planned to encourage unused arable land, degraded land etc to be used for energy purposes?

(d) Is energy use of certain already available primary material (such as animal manure) planned?

(e) Is there any specific policy promoting the production and use of biogas? What types of uses are promoted (local, district heating, biogas grid, natural gas grid integration)?

(f) What measures are planned to improve forest management techniques in order to maximise the extraction of biomass from the forest in a sustainable way? How will forest management be improved in order to increase future growth? What measures are planned to maximise the extraction of existing biomass that can already be put into practice?

Impact on other sectors:

(a) How will the impact of energy use of biomass on other sectors based on agriculture and forestry be monitored? What are these impacts? (If possible, please provide information also on quantitative effects). Is the monitoring of these impacts planned in the future?

(b) What kind of development is expected in other sectors based on agriculture and forest that could have an impact on the energy use? (E.g. could improved efficiency/productivity increase or decrease the amount of by-products available for energy use?)

4.7. Planned use of statistical transfers between Member States and planned participation in joint projects with other Member States and third countries

Under this subchapter the expected use of cooperation mechanisms between Member States and Member States and third countries has to be described. This information should draw on that provided in the forecast document referred to in Article 4.3 of the Directive 2009/28/EC.

At present Gibraltar has no plans to participate in joint projects with Member States or third countries or to undertake statistical transfers. This section therefore is not applicable at this point in time.

4.7.1. Procedural aspects

(a) Describe the national procedures (step by step) established or to be established, for arranging a statistical transfer or joint project (including responsible bodies and contact points).

(b) Describe the means by which private entities can propose or take part in joint projects either with Member States or third countries

(c) Give the criteria for determining when statistical transfers or joint projects shall be used.

(d) What is going to be the mechanism to involve other interested Member States in a joint project?

(e) Are you willing to participate in joint projects in other Member States? How much installed capacity/electricity or heat produced per year are you planning to support? How do you plan to provide support schemes for such projects?

4.7.2. Estimated excess production of renewable energy compared to the indicative trajectory which could be transferred to other Member States

Please use Table 9 filling in the required information.

4.7.3. Estimated potential for joint projects

(a) In which sectors can you offer renewable energy use development in your territory for the purpose of joint projects?

(b) Has the technology to be developed been specified? How much installed capacity/electricity or heat produced per year?

(c) How will sites for joint projects be identified? (For example can local and regional authorities or promoters recommend sites? Or can any project participate regardless of its location?)

(d) Are you aware of the potential for joint projects in other Member States or in third countries? (In which sector? How much capacity? What is the planned support? For which technologies?)

(e) Do you have any preference to support certain technologies? If so, which?

4.7.4. Estimated demand for renewable energy to be satisfied by means other than domestic production

Table 9 "Estimated excess and/or deficit production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States in [Member State] (ktoe)" is not applicable to Gibraltar's case and therefore is not included here.

5. Assessments

5.1. Total contribution expected of each renewable energy technology to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity, heating and cooling and transport.

Table 10: estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable technology in Gibraltar to meet the binding targets and the indicative interim trajectory for the shares of energy in renewable resources <u>in electricity</u> (2010-2020)

	2005		2010		2011		2012		2013		2014	
Solar:	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**
Photovoltaic	0	0	0	0	0	0	0	0	0	0	Nominal	Nominal
Concentrated solar power	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tide, wave, ocean	0	0	0	0	0	0	0	0	0	0	0	0
Wind:	0	0	0	0	0	0	0	0	0	0	0	0
onshore	0	0	0	0	0	0	0	0	0	0	0	0
offshore	0	0	0	0	0	0	0	0	0	0	0	0
Biomass:	0	0	0	0	0	0	0	0	0	0	0	0
Solid	0	0	0	0	0	0	0	0	0	0	0	0
Biogas	0	0	0	0	0	0	0	0	0	0	0	0
bioliquid	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	Nominal	Nominal
Of which CHP	0	0	0	0	0	0	0	0	0	0	0	0

	2015		2016		2017		2018		2019		2020	
Solar:	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**	**MW**	**GWh**
Photovoltaic	1	1.784	3	5.351	6	10.701	9	16.052	13	23.186	16.5	29.428
Concentrated solar power	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tide, wave, ocean	0	0	0	0	0.5	0.876	0.5	0.876	1.0	1.752	1.0	1.752
Wind	0	0	0.12	0.189	0.12	0.189	5.0	13.841	5.0	13.841	5.0	13.841
onshore	0	0	0.12	0.189	0.12	0.189	1.0	1.577	1.0	1.577	1.0	1.577
offshore	0	0	0	0	0	0	4.0	12.264	4.0	12.264	4.0	12.264
Biomass*	0	0	0	0	1	7.884	1	7.884	1	7.884	1	7.884
Solid	0	0	0	0	1	7.884	1	7.884	1	7.884	1	7.884
Biogas	0	0	0	0	0	0	0	0	0	0	0	0
bioliquid	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1.784	3.12	5.54	7.62	19.65	15.5	38.65	20	46.66	23.5	52.91
Of which CHP	0	0	0	0	0	0	0	0	0	0	0	0

* Estimated electricity production from biodegradable fraction of MSW

Table 11: estimation of total contribution (installed capacity, gross electricity generation) expected from each renewable technology in Gibraltar to meet the binding targets and the indicative interim trajectory for the shares of energy in renewable resources in <u>transport</u> (2010-2020) (ktoe)

	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol/bio-ETBE	0	0	0	0	0	0	*	*	*	*	*	*
Of which Biofuels Article 21.2	0	0	0	0	0	0	*	*	*	*	*	*
Of which imported	0	0	0	0	0	0	*	*	*	*	*	*
Biodiesel	0	0	0	0	0	0	*	*	*	*	*	*
Of which biofuels Article 21.2	0	0	0	0	0	0	*	*	*	*	*	*
Of which imported	0	0	0	0	0	0	*	*	*	*	*	*
Hydrogen from renewables	0	0	0	0	0	0	*	*	*	*	*	*
Renewable electricity	0	0	0	0	0	0	*	*	*	*	*	*
Of which road transport	0	0	0	0	0	0	*	*	*	*	*	*
Of which non-road transport	0	0	0	0	0	0	*	*	*	*	*	*
Others (biogas, vegetable oils etc) – please specify	0	0	0	0	0	0	*	*	*	*	*	*
Of which biofuels Article 21.2	0	0	0	0	0	0	*	*	*	*	*	*
TOTAL	0	0	0	0	0	0	*	*	*	*	*	*

* Values not yet available: analysis ongoing.

5.2. Total contribution expected from energy efficiency and energy saving measures to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable sources in electricity, heating & cooling and transport.

See Table 1.

5.3. Assessment of the impacts (Optional)

5.4. Preparation of the National Renewable Energy Action Plan and the follow-up of its implementation

(a) How were regional and/or local authorities and/or cities involved in the preparation of this Action Plan? Were other stakeholders involved?

Gibraltar is a single urbanised area and HMGOG is the single tier of Government. The Department of the Environment, as the relevant agency of HMGOG, has taken every opportunity to canvass the opinions of all relevant stakeholders in the preparation of this document.

(b) Are there plans to develop regional/local renewable energy strategies? If so, could you please explain? In case relevant competencies are delegated to regional/local levels, what mechanism will ensure national target compliance?

Gibraltar being of limited size, and having a single tier of Government, there can be no plans for a more "local" approach to delivery of this Action Plan.

(c) Please explain the public consultation carried out for the preparation of this Action Plan.

This Action Plan takes into account the Gibraltar Renewable Energy Strategy completed in 2014, and the deliberations of the Gibraltar Climate Change Task Force, which was initiated in 2013. These two initiatives featured public sector consultation and presentation, both via meetings of the Climate Change Task Force and bilateral meetings with industry, residents, and non-governmental organisations, particularly those associated with environmental protection and conservation, throughout 2013.

(d) Please indicate your national contact point/the national authority or body responsible for the follow up of the Renewable Energy Action Plan?

The Department of the Environment within the Ministry of Health, the Environment, Energy and Climate Change.

(e) Do you have a monitoring system, including indicators for individual measures and instruments, to follow up the implementation of the Renewable Energy Action Plan? If so, could you please give more details on it?

The Department of the Environment in 2014 developed the Gibraltar Renewable Energy Strategy, which includes indicative interim targets for the deployment of renewable energy capacity. Reference can be taken to these in the approach to 2020.