SOCIETE GENERALE POSITIVE IMPACT BONDS 2015, 2016, 2018, 2019

ANNUAL USE OF PROCEEDS REPORTING At 31st December 2019

Audited by EY



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TABLE OF CONTENTS

- 1. KEY ENVIRONMENTAL & SOCIAL IMPACT INDICATORS
- 2. INDICATIVE INFORMATION ON POSITIVE IMPACT BOND PROCEEDS ALLOCATION
- 3. USE OF PROCEEDS DESCRIPTION BY SECTOR
 - A. 2015 POSITIVE IMPACT BOND
 - B. 2016 POSITIVE IMPACT BOND
- 4. CALCULATION METHODOLOGY OF THE GHG AVOIDED PRO-RATED INDICATOR
- 5. EY ANNUAL AUDIT REPORT



KEY ENVIRONMENTAL & SOCIAL IMPACT INDICATORS



KEY ENVIRONMENTAL & SOCIAL IMPACT INDICATORS- CLIMATE BENEFITS

	INDICATORS	2015 PI BOND	2016 PI BOND	2018 PI BOND	2019 PI BOND
Global indicator	Ex-ante estimated annual GHG emissions reduced or avoided in tCO2e	6,080,963	6,083,349	261,147	675,279
Pro-Rated indicator	Pro-Rated Ex- ante estimated annual GHG emissions reduced or avoided in tCO2e for 1K€ investment	0.75	0.56	0.48	0.48
Global indicator	Total Capacity of Renew able energy plant(s) in MW	3,365	2,896	128	376

Climate Benefits associated to the Positive Impact Finance assets selected as of 31.12.2019

Comments:

1- Global Indicator:

The Ex-ante estimated annual GHG emissions avoided considers the performance of the projects allocated to each bond. This indicator is calculated according to EIB methodology at 31st December 2019 which takes into account: the capacity installed, the technology and the location of the project.

2- Pro-rated indicator:

Société Générale decided to disclose also the bonds contribution to the fight against Climate Change with an indicator GHG avoided prorated to the actual funding of the project as of 31st December 2019. The calculation methodology detailed in Appendix IV, is based on International Energy Agency (IEA) reference tables taking into account the technology and the location of the projects.

The pro-rated GHG emissions avoided indicator is reflecting the cost discrepancies between the various renewable energy technologies which have a direct impact on the Climate performance of the K€ invested. The size and location of projects allocated to each portfolio influence the value of this indicator, e.g. offshore wind farms will have a higher cost than onshore wind farms. The technology used within the renewable energy projects plays a significant role in the cost assessment per kW (according to the IEA tables), and consequently in Société Générale's share of the funding.



KEY ENVIRONMENTAL & SOCIAL IMPACT INDICATORS

At 31st. Dec. 2019	Capacity (in MW)					
Source of Renewable Energy	2015 PI BOND	2016 PI BOND	2018 PI BOND	2019 PI BOND		
Wind	2304	2575	128	376		
Solar	880.9	321	-	-		
Other (Hydropower)	180	-	-	-		
Total Capacity	3365	2896	128	376		





■ Wind ■ Solar ■ Other (Hydropower)

2016 PI BOND





KEY ENVIRONMENTAL & SOCIAL IMPACT INDICATORS

At 31st Dec. 2019		Capacity (in MW)					
Geographical Area	2015 PI BOND	2016 PI BOND	2018 PI BOND	2019 PI BOND			
Designated countries	3,185	2,774	-	-			
Non Designated Countries	180	122	128	376			
Total Capacity	3,365	2,896	128	376			

2015 PI BOND



Designated countries Non Designated Countries

2016 PI BOND



Designated countries Non Designated Countries

(*) Designated Countries are those countries deemed to have robust environmental and social governance, legislation systems and institutional capacity designed to protect their people and the natural environment.



2 INDICATIVE INFORMATION ON POSITIVE IMPACT BOND PROCEEDS ALLOCATION



At 31st. Dec. 2019	Outstanding (in EURm)			
Source of Renewable Energy	2015 PI BOND	2016 PI BOND	2018 PI BOND	2019 PI BOND
Wind	325	448	59	122
Solar	175	131	-	-
Other (Hydropower)	17	-	-	-
Total Allocated	518	579	59	122

2015 PI BOND



Wind Solar Other (Hydropower)

2016 PI BOND



Wind Solar



At 31st Dec. 2019		Outstanding (in EURm)				
Geographical Area	2015 PI BOND	2016 PI BOND	2018 PI BOND	2019 PI BOND		
Designated countries	500	536	-	-		
Non Designated Countries	17	43	59	122		
Total Outstanding	518	579	59	122		
Total allocated / issuance	>100%	>100%	>100%	>100%		

Note: for the 2018 and 2019 issuances, the outstanding amount represents the actual amount utilised, which will increase according to the advancement of the project. Société Générale's commitment amount on the project is in any case superior to 100% of the 2018/2019 PI Bond's proceeds



Designated countries Non Designated Countries

2016 PI BOND



Designated countries Non Designated Countries

(*) Designated Countries are those countries deemed to have robust environmental and social governance, legislation systems and institutional capacity designed to protect their people and the natural environment.



• 2015 Positive Impact Bond: 19 Positive Impact Finance assets selected as of 31/12/2019 and reviewed by an external auditor (EY)

N°	Positive Impact Finance Assets	Signing Date	Maturity Date	Date SG Initial Capacity (in M W)		Source of Renewable Energy	Geographical area
1	BOW LAKE WIND PROJECT	Jul-14	Jan-23	CAD 40M 58		Wind	Americas
2	ARMOW WIND FARM	Oct-14	Feb-23	CAD 65M	179	Wind	Americas
3	WIND FARM CROIX BENJAM IN	Aug-13	Dec-29	EUR 19M	28	Wind	Europe
4	SILVERTON WIND FARM	Jan-17	M ar-22	A UD 45M	200	Wind	Asia Pacific
5	WIND FARM (*)	M ay- 17	Jun-33	EUR 35M	30	Wind	Europe
6	MOUNT EMERALD WIND FARM	Oct-16	Nov-23	A UD 65M	180	Wind	Asia Pacific
7	WIND FARM (*)	M ay- 17	Jun-32	EUR 55M	216	Wind	Europe
8	SOLAR FARM (*)	SOLAR FARM (*) Jul-16 M ar-34 A UD 52M 20		20	Solar	Asia Pacific	
9	COPPER MOUNTAIN II SOLAR PV	M ay- 13	M ay-23	USD 66M	150	Solar	Americas
10	COPPER MOUNTAIN III SOLAR PV	M ar-14	M ay-25	USD 55M	250	Solar	Americas
11	SOLAR POWER PLANT (*)	Jul-13	Jun-31	EUR 18M	20	Solar	Europe
12	SOLAR POWER PLANT (*)	Jul-13	May-31	EUR 30M	36	Solar	Europe
13	NEOEN CESTAS	Nov-14	Apr-34	EUR 368M	300	Solar	Europe
14	SOLAR POWER PLANT (*)	Dec-12	May-31	EUR 36M	55	Solar	Europe
15	SOLAR POWER PLANT (*)	M ay- 17	Dec-32	EUR 35M	50	Solar	Europe
16	ASAHAN-1HYDROPOWER PLANT	M ay- 14	Sep-27	USD 30M	180	Hydro po wer	Asia Pacific
17	COOPERS GAP WIND FARM AUD574MM 160817	Aug-17	Sep-22	A UD 82M	453	Wind	Asia Pacific
18	WIND FARM (*)	Aug-17	Sep-31	EUR 48M	630	Wind	Europe
19	WIND FARM (*)	Dec-17	Dec-29	EUR 73M	330	Wind	Europe



• 2016 Positive Impact Bond: 14 Positive Impact Finance assets selected as of 31/12/2018 and reviewed by an external auditor (EY)

N°	Positive Impact Finance Assets	Signing Date	Maturity Date	urity Date SG Initial Commitment Capacity (in M W)		Source of Renewable energy	Geographical area
1	BALTIC 2 OFFSHORE WIND FARM	Jan-15	Apr-27	EUR 60M	288	Wind	Europe
2	DUDGEON WIND FARM	M ay-16	Jun-32	GBP 75M	402	Wind	Europe
3	DWBICLASS B MEMBER TL& LC 04-30-2018	Apr-18	Apr-25	USD66M	30	Wind	Americas
4	GALLOPER OFFSHORE WIND FARM	Oct-15	Jun-35	GBP 152M	336	Wind	Europe
5	MEIKLE WIND FARM Jun-15 May-24 CAD 52M 180		180	Wind	Americas		
6	NORDSEE ONE OFFSHORE	Jun-15	Dec-29	EUR 40M	332	Wind	Europe
7	VEJA MATE OFFSHORE	Aug-15	Dec-29	EUR 45M	400	Wind	Europe
8	ONSHORE WIND FARM (*)	Apr-16	Dec-28	GBP 15M	73	Wind	Europe
9	MERKUROFFSHORE	Aug-16	Dec-35	EUR 71M	396	Wind	Europe
10	FALCK RENEWABLES WIND LTD	M ay-17	Jun-27	EUR 13M	138	Wind	Europe
11	PARQUE SOLAR CONEJO	Aug-15	Nov-31	USD 66M	122	Solar	Americas
12	SERREZUELA SOLAR II SL	Dec-15	Dec-31	EUR 34M	50	Solar	Europe
13	MANILDRA SOLAR FARM	M ar-17	M ar-22	AUD 41M	50	Solar	Asia Pacific
14	CUBICO DIANA	Oct-19	Oct-36	EUR 38M	99	Solar	Europe
	CUB ICO DIANA	Oct-19	Oct-36	EUR 38M	99	Solar	Europe



• 2018 Positive Impact Bond: 1 Positive Impact Finance asset selected as of 31/12/2019 and reviewed by an external auditor (EY)

			Maturity	SG Initial	Underlying physical assets		
N°	Positive Impact Finance assets	Signing Date	Date	commitment	Capacity (in MW)	Source of renewable energy	Geographical area
1	OFFSHORE WIND FARM (*)	2018	-	-	-	Wind	Asia Pacific



• 2019 Positive Impact Bond: 1 Positive Impact Finance asset selected as of 31/12/2019 and reviewed by an external auditor (EY)

			Maturity	SG Initial	Underlying physical assets		
N°	Positive Impact Finance assets	Signing Date	Date	commitment	Capacity (in MW)	Source of renewable energy	Geographical area
1	OFFSHORE WIND FARM (*)	2019	-	-	-	Wind	Asia Pacific



3 USE OF PROCEEDS DESCRIPTION BY SECTOR

2015 Positive Impact Bond

2016 Positive Impact Bond



GENEF	RIC POSITIVE IM	IPACTS ASSESSED FOR WIND PROJECTS (1)
SOCIAL	Access to energy	Assessment of the impact within the project area of influence - on the population's accessibility to modern energy services => It refers to potential benefits for household access to electricity and clean cooking facilities
SC	Creation of employment	Assessment of the number of permanent employment generated, directly or indirectly by the project => for wind projects, it concerns most specifically the construction phase benefits
IENT	Climate	Assessment of the influence of the project on the level of greenhouse gases (GHG) emissions
ENVIRONN	Resource Efficiency	Assessment of the use of non renewable resources during the whole project life. Non renewable resource refers to any natural resource that cannot be replenished by natural means at the same rates that it is consumed (e.g. minerals, etc.)
ECONOMICENVIRONMENT	Assessment on I	ocal economic development in low to low-medium income economies

GENEF	RIC NEGATIVE I	MPACTS ASSESSED FOR WIND PROJECTS (1)
AL	Quality of health	Assessment of the impact within the project area of influence on the population's ability to live in "full health" => for wind projects, it refers in particular to the noise impact on local population
		 Cultural heritage : sources and evidence of human history and culture regardless of origin, development and level of preservation (tangible/material heritage), and the cultural assets associated with this (intangible/non-material heritage) Visual Impact : Assessment on visual impact for local population
ENVIRONMENT	Biodiversity	Assessment –within the project area of influence – of the potential gain or loss of biodiversity. => for wind projects, it refers to potential impacts on local wildlife (bats, birds, and other local fauna) & on migratory birds. The mitigation measures typically consists in the implementation of a monitoring of birds and bat mortality during operational phase, re-vegetation of cleared areas, study of the sustainability of nesting sites, etc.

(1) List of generic expected positive and negative impacts that we systematically evaluate for the wind sector. Every project presents also specific potential impacts linked to the location and the project which are also identified and evaluated. Description of negative impacts management is included hereafter.





Project Description

58.32 MW wind power project to be constructed in two phases by BluEarth Renewables Inc. approximately 80 km north of Sault Ste. Marie, Ontario, Canada. It consists of 36 turbines type 1.6 -100 from General Electric. The Project will be constructed in two phases and benefits from two 20-year PPAs with the Ontario Power Authority via the Ontario Feed-in-Tariff Program for the full capacity, electricity production and associated renewable energy attributes.

Positive impacts

ENVIRONMENT: Climate & Resource efficiency - The wind farm generates 58.32 MW of power from a renewable, clean fuel source of energy. Production capacity generates enough energy to power 15,000 households.

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - Replanting and restoration plan after construction activities are completed (Re-vegetate disturbed areas with fast-growing Ontario native species for example).

In addition to the annual monitoring reports, all observations of species at risk during the Project or the monitoring will be submitted to the Natural Heritage Information Centre on a Rare Species Reporting Form within three (3) months of the observation. If an impact is observed beyond thresholds established by the Ministry of Natural Resources, operational changes such as turbine shut-downs may be implemented to reduce collisions.



SOCIAL: Physical or economic resettlement - Aboriginal groups are involved in the project as the project site is within their asserted traditional territory. The Batchewana First Nation group is now a 50% partner in the Project and Michipicoten First Nation group has been granted participant status in the ERT (Environmental Review Tribunal) proceedings.





Project Description

Development of a greenfield 180MW wind farm located in the township of Kincardine, Ontario, Canada. The wind farm consists of 91 turbines 2.3-101 wind turbines, manufactured by Siemens. The electricity generated by the plant will be sold to Ontario Power Authority under a 20 year power purchase agreement.

Positive impacts

ENVIRONMENT: Climate & Resource efficiency - the wind farm generates 180 MW of power from a renewable, clean fuel source of energy. Production capacity generates enough energy to power 55,000 households. Compared to coal-fired generation, the project will offset 596,300 tonnes per year of Carbon Dioxide Emissions reduction equivalent to 116,900 cars.

Negative impacts and their mitigations

SOCIAL : Cultural heritage - preservation in-situ as well as amendment to the project layout.

ENVIRONMENT : Biodiversity - Monitoring of bird and bat mortality during operational phase. Re-vegetation of cleared areas as soon as possible and maintenance of vegetation to ensure growth.





VP FARM CROIX BENJAMIN

Project Description

The Project consists of the design, construction, operation and maintenance of an onshore wind farm for a nominal capacity of 28MW in Champagne Ardenne region (France). The Project will implement 14 V112 2 MW turbines supplied by Vestas. The Project has entered into Power Purchase Agreement with EDF for the period of 15 years at fixed price.

Positive impacts

ENVIRONMENT: Climate & resource efficiency - the wind farm generates 28 MW of power from a renewable, clean fuel source of energy. Production capacity generates enough energy to power 31,226 households.

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - Considering project location in the secondary bird migration routes, collision risk has been strongly decreased by respecting a minimal distance between turbines of 310 m. Monitoring and compensatory measures also include an acoustic study, sustainability of nesting sites and financial compensation.



ENVIRONMENT: Resettlement - Appropriate compensatory measures have been taken regarding the loss of 0.2 ha per turbine of agricultural area and the creation of an access road through cultivation; "Baux emphythéotiques" have been signed with farmers which ensure creation of direct and indirect employment for the local population and increase in tourist attraction by promoting green energy in the region.





Project Description

Silverton Wind Farm, an onshore wind project located in the Barrier Ranges of New South Wales, is the first greenfield project developed by the Powering Australia Renewables Fund (PARF). The wind farm will have a capacity of 200MW with 58 wind turbines installed. The wind farm is expected to be fully operational by mid-2018.

Positive impacts

ENVIRONMENT: Climate & resource efficiency - Once operational the wind farm will generate approximately 780,000 MWh of energy annually, enough to power the equivalent of more than 137,000 average Australian homes. According to AGL, Silverton Wind Farm will also reduce Australia's carbon dioxide emissions by 655,000 tonnes annually, the equivalent of taking 192,000 cars off the road each year.

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - Competent authorities have not considered impacts to be sufficiently significant to require a biodiversity offsetting in the project approval. The planning permit conditions include measures to minimise the clearing of native woodland vegetation and fauna habitat and woody habitat and high biodiversity value vegetation communities, impacts on the sensitive Barrier Range Dragon Habitat, as well as on threatened bird and bat populations. The Project is to prepare a Biodiversity Management Plan prior to construction, and specific bird and bat monitoring and management measures to be incorporated into the Operational Environmental Management Plan.

SOCIAL: Culturage Heritage - A number of Aboriginal artifacts have been encountered. The Project is required by the competent authorities to prepare, prior to the commencement of construction, a Heritage Management Plan. Sufficient room is available in the construction schedule should further finds require work to be stopped at a given site.







Project Description

Mount Emerald Wind Farm ("the Project") is a 180MW wind farm project located in the State of Queensland, being developed by Ratch-Australia Corporation Limited ("Ratch" or the "Sponsor"). The Project includes the installation of 53 Vestas wind turbines with a total nameplate capacity of circa 180MW.

Positive impacts

ENVIRONMENT: Climate & resource efficiency - Wind turbines are a clean source of renewable energy. The project company reported that Mt Emerald Wind Farm will reduce Greenhouse Gas Emissions by 450,000 tonnes, whilst providing enough electricity to power the annual needs of approx 75,000 homes per year.

Negative impacts and their mitigations

ENVIRONMENT: Noise modeling results at each residence concluded that the siting of the project is such that the predicted noise levels are below the applicable noise criteria.

ENVIRONMENT: Biodiversity -. Fauna and flora surveys have been conducted by third party specialists as part of the permitting process. Species specific management plans have been / are being developed (Northern Quoll Management, Avian Species Management) in line with relevant Australian legislation. For example, infrastructure layout is to avoid high quality foraging or maternal denning habitat for quolls.







PERS GAP WIND FARM

Project Description

The Coopers Gap Wind Farm, located 180km north-west of Brisbane near Cooranga North, is the second greenfield project developed by the Powering Australia Renewables Fund. The Wind Farm will have a capacity of 453 MW, with 123 turbines installed, and will be the largest wind farm in Australia. The wind farm is planned to be connected to a new Powerlink substation along the new Western Downs to Halys 275kV transmission line built by Powerlink.

Positive impacts

ENVIRONMENT: Climate & Resource efficiency - Wind is a renewable, clean source of energy and does not use any natural resources as fuel. The electricity generated by a wind energy facility in Australia such as the Project, can offset GHG emissions that would otherwise have been produced by thermal power plants. The developer estimates CO2 emissions savings of approximately 1.2 million tons per annum.

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - The Project is located in a highly cleared landscape where much of the original vegetation and habitat has been removed for grazing and cropping. The Project Site largely avoids areas of ecological significance, which has been achieved through a process of site verification and design refinement. During operation of the Project, the potential for occasional birds and bats collision will be closely monitored in accordance with the Bat and Bird Adaptive Management Programme and will assist to determine appropriate mitigation measures, as required.



ACCESS TO WATER

4

ACCESS TO ENERGY

ENVIRONMENT: **Noise** - A noise impact assessment was conducted for the operation of the Project in general accordance with the requirements of the Queensland Wind Farm State Code and supporting Planning Guideline and the noise predictions demonstrated the noise limits are expected to be complied with during operation of the Project. Compliance measurements will be undertaken at a selected number of the potentially most affected sensitive receivers following the commissioning of the Project.

ENVIRONMENT: Landscape and Visual - In terms of impacts to scenic amenity, although the Project is likely to be visible from northern elevated and/or exposed parts of the Bunya Mountains National Park, there are no formal walking tracks through this part of the National Park and the Project will not fundamentally alter the reasons for which this national asset was designated.

SOCIAL: Physical or economic resettlement - The layout of the Project has been developed so that existing property owners can continue agricultural uses in conjunction with the development and ongoing operation of the Project. Owners of properties containing the wind farm infrastructure are willingly involved in the Project and will continue agricultural activities on their properties.

SOCIAL: Cultural Heritage - Four Aboriginal cultural heritage sites are recorded in the Project Area. A Cultural Heritage Management Plan (CHMP) under Section 7 of the Aboriginal Cultural Heritage Act has been developed and negotiated with the relevant Aboriginal Parties prior to construction.



GEN	ERIC POSITIVE	IMPACTS ASSESSED FOR SOLAR PROJECTS (1)					
SOCIAL	Access to energy	Assessment of the impact within the project area of influence - on the population's accessibility to modern energy services => It refers to household access to electricity and clean cooking facilities					
SO	Creation of employment	Assessment of the number of permanent employment generated, directly or indirectly by the project => for solar projects, it concerns most specifically to the construction phase					
MENT	Climate	Assessment of the influence of the project on the level of greenhouse gases (GHG) emissions					
ENVIRONMENT	Resource Efficiency	Assessment of the use of non renewable resources during the whole project life. Non renewable resource refers to any natural resource that cannot be replenished by natural means at the same rates that it is consumed (e.g. minerals, etc.)					
ECONOMIC	Assessment on local economic development in low to low-medium income economies						

GENERIC NEGATIVE IMPACTS ASSESSED FOR SOLAR PROJECTS (1) None Soil Assessment – within the project area of influence – of the potential impact on the soils composition (e.g. contamination or removal of potential contaminants). => for solar projects, it concerns most specifically the construction phase Biodiversity Assessment – within the project area of influence – of the potential gain or loss of biodiversity. Biodiversity Assessment – within the project area of influence – of the potential gain or loss of biodiversity. Soil Assessment – within the project area of influence – of the potential gain or loss of biodiversity. Biodiversity Assessment – within the project area of influence – of the potential gain or loss of biodiversity. Soil Assessment – within the project area of influence – of the potential gain or loss of biodiversity. Biodiversity Soil a projects, it refers to potential impacts on local wildlife & flora. The mitigation measures typically consists in the implementation of a monitoring of endangered and protected species; during construction and operational phase, revegetation of cleared areas, openings to allow the passing of animals, etc.

(1) List of generic expected positive and negative impacts that we systematically evaluate for the solar sector. Every project presents also specific potential impacts linked to the location and the project which are also identified and evaluated. Description of negative impacts management is included hereafter.



COPPER MOUNTAIN II SOLAR PV

Project Description

Construction of Copper Mountain Solar PV plant located in Boulder City about 40 miles southeast of Las Vegas, Nevada. The project will be built in two phases: the 92MW initial phase reached commercial operation in December 2012; the second 58MW phase will reach commercial operation in 2015. The Project entered into a 25-year PPA in July 2011 with PG&E for the full 150 MW nominal capacity of the Project. The technology being used by the Project will be commercially-proven First Solar Series 3 thin-film cadmium telluride PV modules.



ENVIRONMENT: Climate & Resource efficiency - The solar power plant generates 150MW of power from a renewable, clean fuel source of energy.

Production capacity enables to generate enough energy to power about 45,000 homes.

Negative impacts and their mitigations

ENVIRONMENT: All potential social and environmental conditions were examined independently to ensure that the project complied with local environmental legislation.





COPPER MOUNTAIN III SOLAR PV

Project Description:

Copper Mountain Solar III is a 250MW utility scale PV solar project located on 1,400 acres of land in the Nevada desert at Boulder City, USA. The Project uses polycrystalline PV modules supplied by Trina Solar Energy Co., Ltd. The generated power will be sold through a 20 year PPA contract with Southern California Public Power Authority



Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - Some threatened species would be affected by the project construction and operation. Mitigation and compensation measures have been implemented like acquisition of areas of desert tortoise habitat to partially offset the potential adverse effects of the project.



MASSANGIS 2 SOLAR POWER PLANT

Project Description

Refinancing of the Massangis 2 Project, a 20 MWp photovoltaic power plant located in Massangis, Yonne department in France. The Project is part of a larger fixed ground-mounted photovoltaic power plant development composed of 5 independent sub-projects comprising 56 MWp of peak capacity. The Project is equipped with thin film PV modules manufactured and supplied by First Solar.



Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - An environmental monitoring enables to assess the impact of the project on the fauna. To preserve natural habitats, openings will be made in the lower part of the perimeter fence to allow for the passing of small animals.



CRUCEY1 SOLAR POWER PLANT

Project Description

Refinancing of the Crucey 1 Project, a 36 MWp photovoltaic power plant located in Crucey village, Eure-et-Loir department. The Project is part of a larger fixed ground-mounted photovoltaic power plant development composed of 5 independent sub-projects comprising 60 MWp of peak capacity. The Project is equipped with thin film PV modules manufactured and supplied by First Solar.

Positive impacts

ENVIRONMENT: Climate & Resource efficiency - The photovoltaic solar plant generates 36 MW of power from a renewable, clean fuel source of energy.

Production capacity generates enough energy to power approximately 17,000 households.

ENVIRONMENT - Soil: The soil has been regenerated before construction works due to the former military nature of the site.



Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - an annual ecological monitoring assesses the impact of the project on the fauna once per year for the first five years and then every five years. The power plant's footprint has been adjusted to protect unspoilt spaces in five environmentally sensitive areas.





Project Description

The project entails the construction of the Cestas Solar Park located in municipality of Cestas, Bordeaux, France. The solar park will have capacity of 300MW and involve 72-cell multi crystalline solar modules provided by Yingli Green Energy. The park is being constructed on a 250 hectare site.

Positive impacts

ENVIRONMENT: Climate & resource efficiency - the solar park generates 300 MW of power from a renewable, clean fuel source of energy. Annual estimated production will cover the entire households' needs from Bordeaux

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - Measures taken include the reforestation of the surroundings of the site, the adaptation of work schedule to the species biology & the creation of passages along the fence to allow access of small animals. In order to ensure the preservation of the area of wet heath ("Lande Humide") PV module will not to be installed in this area.





TOUL ROSIERES SOLAR PV PLANT

Project Description

Financing of a 55 MWp ground-mounted solar photovoltaic located 30 km from Nancy, on the municipalitites of Avrainville, Jaillon, and Rosières-en-Haye. The PV plant is located on a former military air base ("Base Aérienne 136", closed in 2004), owned by the French state.

Positive impacts

ENVIRONMENT: Climate & resource efficiency - the solar plant generates 55 MW of power from a renewable, clean fuel source of energy.

ENVIRONMENT: Soil - Previous to construction works, decontamination, and dismantlement works have been performed. Remediation should improve ground-water quality in the long run.



Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - The former military base 136 was registered in 1999 as sensitive natural area in Meurthe-et-Moselle due to the presence of: meadow and Calcareous grassland, ponds and seven butterflies classified. As a preventive measure, the surface dedicated to the solar plant has been narrowed. A biological & ecological monitoring to be conducted for the entire operational phase.



USE OF PROCEEDS DESCRIPTION – HYDROPOWER SECTOR

GENERIC POSITIVE IMPACTS ASSESSED FOR HYDROPOWER PROJECTS⁽¹⁾

SOCIAL	Access to energy	Assessment of the impact within the project area of influence - on the population's accessibility to modern energy services => It refers to household access to electricity and clean cooking facilities
SUCIAL	Creation of employment	Assessment of the number of permanent employment generated, directly or indirectly by the project => for hydropower plants, it concerns most specifically to the construction phase
ENVIRONMENT	Climate	Assessment of the influence of the project on the level of greenhouse gases (GHG) emissions
ECONOMIC	Assessment on local economic development in low to low-medium income economies	

GENERIC NEGATIVE IMPACTS ASSESSED FOR HYDROPOWER PROJECTS⁽¹⁾

	Access to water	Assessment-within the project area of influence – of the potential impact on water quality and quantity, for both surface and ground water for local population. => for hydropower plant, it concerns in particular the operational phase
SOCIAL	Physical or economic resettlement	Assessment of the number of families – within the project area of influence – physically displaced (relocation or loss of shelter) or economically displaced (loss of access or access to assets that leads to loss of income sources or mean of livelihood) as a results of project-related land acquisition* or restriction of access to natural resources. * Land acquisition includes both outright purchases of property and purchases of access rights, such as rights-of-way.
ENVIRONMENT	Soil	Assessment –within the project area of influence – of the potential impact on the soils composition (e.g. contamination or removal of potential contaminants). => for hydropower plants: it refers typically to impact on clearing or soil contamination during the construction phase, impact of sedimentation, etc.
	Biodiversity	Assessment –within the project area of influence – of the potential gain or loss of biodiversity. => for solar projects, it refers to potential impacts on local wildlife & flora. The mitigation measures typically consists in the implementation of a monitoring of endangered and protected species; during construction and operational phase, re-vegetation of cleared areas, openings to allow the passing of animals, etc.
	Water	Assessment–within the project area of influence – of the potential impact on water quality and quantity, for both surface and ground water.

(1) List generic expected positive and negative impacts that we systematically evaluate for the Hydropower sector. Every project presents also specific potential Impacts linked to the location and the project which are also identified and evaluated. Description of negative impacts management is included hereafter.



USE OF PROCEEDS DESCRIPTION – HYDROPOWER SECTOR



ASAFAN 1 HYDROPOWER PLANT

Project Description

Refinancing project of the 2 x 90 MW run-of-the river hydroelectric power plant in order to support the operation of the 180-MW Asahan 1 hydropower project in North Sumatra (Indonesia).

Positive impacts

SOCIAL: Access to energy - Renewable and alternative source of energy at a lower cost for the local population of North Sumatra which suffers from chronic power outages and whose power supply gap is growing.

ENVIRONMENT: Climate & Resource efficiency - Project registered as a Clean Development Mechanism project and emission reductions is contributing to a better energy mix for the country.

ECONOMIC DEVELOPMENT: Supply of electricity at an affordable cost to meet growing demand both for households and firms. The project enhances employment and local industries.



Negative impacts and their mitigations

ENVIRONMENT: Waste management - Very low waste (lubricants) which are well managed. Monitoring reports are delivered to the regional government on a six monthly basis.



3 USE OF PROCEEDS DESCRIPTION BY SECTOR

2015 Positive Impact Bond 2016 Positive Impact Bond



GENERIC POSITIVE IMPACTS ASSESSED FOR WIND PROJECTS (1)				
SOCIAL	Access to energy	Assessment of the impact within the project area of influence - on the population's accessibility to modern energy services => It refers to potential benefits for household access to electricity and clean cooking facilities		
	Creation of employment	Assessment of the number of permanent employment generated, directly or indirectly by the project => for wind projects, it concerns most specifically the construction phase benefits		
ECONOMICENVIRONMENT	Climate	Assessment of the influence of the project on the level of greenhouse gases (GHG) emissions		
	Resource Efficiency	Assessment of the use of non renewable resources during the whole project life. Non renewable resource refers to any natural resource that cannot be replenished by natural means at the same rates that it is consumed (e.g. minerals, etc.)		
ECONOMIC	Assessment on local economic development in low to low-medium income economies			

GENERIC NEGATIVE IMPACTS ASSESSED FOR WIND PROJECTS (1)				
SOCIAL	Quality of health	Assessment of the impact within the project area of influence on the population's ability to live in "full health" => for wind projects, it refers in particular to the noise impact on local population		
	Other	 Cultural heritage : sources and evidence of human history and culture regardless of origin, development and level of preservation (tangible/material heritage), and the cultural assets associated with this (intangible/non-material heritage) Visual Impact : Assessment on visual impact for local population 		
ENVIRONME NT	Biodiversity	Assessment –within the project area of influence – of the potential gain or loss of biodiversity. => for wind projects, it refers to potential impacts on local wildlife (bats, birds, and other local fauna) & on migratory birds. The mitigation measures typically consists in the implementation of a monitoring of birds and bat mortality during operational phase, re-vegetation of cleared areas, study of the sustainability of nesting sites, etc.		

(1) List of generic expected positive and negative impacts that we systematically evaluate for the wind sector. Every project presents also specific potential impacts linked to the location and the project which are also identified and evaluated. Description of negative impacts management is included hereafter.



C 2 OFFSHORE WIND FARM

Project Description

Construction of a 288MW offshore wind farm located in the Baltic Sea, 32km north of the Island of Rugen in Germany. The 80 Siemens wind turbines of 3.6MW each will be developed on an area of 27 square kilometers.

Positive impacts

ENVIRONMENT: Climate & Resources Efficiency - the wind farm generates 288 MW of power from a renewable, clean fuel source of energy which is enough energy to power 340,000 homes per year.

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - Impacts from underwater noise during all stages of the development are not expected to present a significant risk to marine mammals and fish; a periodic monitoring will be carried out during operational phase of the project.

Two sites (Kriegers Flak reefs and sandbanks) listed as 'natural habitat types of Community interest' have been identified, Adjustment to the turbine layout to avoid the specific areas worthy of protection in the Kriegers Flak reefs have been undertaken.

ENVIRONMENT: Water quality - Although no significant impacts are expected, general measures for preserving water quality have been defined in the Environmental protection plan that appropriately reflect the permit conditions.



0: negative impact; 1: passable impact, possible improvement; 2: well remediated impact; 3: neutral impact; 4: positive impact





BCO WIND FARMS

Project Description

Cubico Diana 98.9MW Wind Portfolio: The Cubico Diana 98.9MW Wind Portfolio comprises three projects located in Campania. Apulia and Basilicata. They are all fully operational and range from 17.5 to 54.4 MW. ACCESS TO WATER

Positive impacts

ENVIRONMENT: Climate and Resource Efficiency

The electricity generated by a wind energy facility in Italy such as the Project, can offset GHG emissions that would otherwise have been produced by thermal power plants. The CO2e emission savings estimated using the European Investment Bank methodology amount to approximately 80,000 tons per annum.

Wind energy is a renewable, clean source of energy and does not use any natural resources



Negative impacts and their mitigations

ACCESS TO ENERGY ECONOMIC CONVERGENCE LEVEL OF EDUCATION 3 LANDSCAPE QUALITY OF HEALTH NOISE TRANSPORT... WASTE ACCESS TO HOUSING RESOURCE EFFICIENCY ACCESS TO FOOD CLIMATE CREATION OF EMPLOYMENT BIODIVERSITY PHYSICAL OR ECONOMIC... SOIL CULTURAL HERITAGE AIR

Before construction the three wind farms of the portfolio have concluded the procedures of Assessment of Environmental Impact (V.I.A.) in relation with the relevant national, regional or local authorities and have obtained the relevant permits including the issuance of Environmental Compatibility Positive Opinion (Giudizio Favorevole di Compatibilità Ambientale) and Landscape Authorization (Autorizzazione Paesaggistica). All three wind projects composing the portfolio have been constructed and operated since in material compliance with relevant permits and prescriptions set by the involved Italian authorities.


DUDGEON OFFSHORE WIND FARM

Project Description

Dudgeon Offshore Wind Farm will be constructed with 67 wind turbines, each with a capacity of 6 MW, totaling 402 MW installed generation capacity. The North Sea project site is located 32 km offshore, north of the town of Cromer in North Norfolk, and 20 km north-east of the Sheringham Shoal Offshore Wind Farm.

Positive impacts

ENVIRONMENT: Climate & resource efficiency - Wind turbines are a clean source of renewable energy. Masdar reported that once in operation, the Dudgeon Offshore Wind Farm will generate enough green energy to power more than 400,000 UK homes each year.

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - The project does not overlap any Natura 2000 sites; however, due to the proximity of the Project to the North Norfolk Coast SpecialBIODIVERSITY Protection Area and The Wash and North Norfolk Special Area of Conservation, an Appropriate Assessment was required under Regulation 25 of the Offshore Marine Conservation (Natural Habitats, &c.) and Regulations 2007 which concluded that there will be no adverse effects of the Project on either site or species. The Impacts associated to the Project construction and operation noise have been independently evaluated as minor adverse. Mitigation measures have been taken to minimize any potential residual impacts such as soft start included as imbedded mitigation, development of a Marine Mammal Mitigation Protocol will be undertaken to provide an exclusion area around the noise source to reduce the potential of auditory injury occurring, prohibition of piling during the main spawning season, etc.





DWBI CLASS B MEMBER

Project Description

The Block Island Wind Farm (BIWF) is a 30 MW demonstration size, off-shore wind farm to be built approximately 3 miles off the south east coast of Block Island in the State of Rhode Island in the USA.

Positive impacts

ENVIRONMENT : Climate change & Resources Efficiency - The project is expected to supply enough energy to power approximately 17,200 households resulting in the displacement of marginal generation from natural gas-fired power plants.

ENVIRONMENT: Air quality - Project could effectively displace the diesel-fired generators that are currently used to power the Block Island and their associated emissions of air pollutants.

Negative impacts and their mitigations

SOCIAL: Cultural Heritage - Deepwater Wind will implement an Unanticipated Discoveries Plan for construction that specifies stop work and notification procedures in the event a site of potential cultural significance is encountered during construction

SOCIAL: Economic Resettlement - The location within the Rhode Island Renewable Energy Zone reflects substantial efforts undertaken to choose a site that minimizes the potential impact on existing human uses.

During construction, a comprehensive communication plan will inform commercial and recreational fishermen, mariners, and recreational boaters of construction activities and vessel movements.



ENVIRONMENT: Water quality - Temporary sediment disturbance during construction activities will result in minor, short-term, and localized increases in total suspended solids near turbines foundations. Jet plowing, horizontal directional drilling techniques and use of dynamic positioning vessels to install the Project cables will minimize sediment disturbance and alteration.

ENVIRONMENT: Biodiversity - The location within the Rhode Island Renewable Energy Zone was chosen to minimize the potential impact on natural resources (benthic ecology, birds, marine mammals, sea turtles, fisheries resources, and habitat). Number of wind turbines was reduced from 8 to 5, and Deepwater Wind committed to pre- and post-construction beached bird surveys on southern Block Island, to shipbased bird monitoring focused on displacement of migrating and foraging birds and to nocturnal bird flight and collision monitoring focused on nocturnal migrant activity and collision rates at selected turbines.



CALLO PER OFFSHORE WIND FARM

Project Description

The Project is a 336MW offshore wind farm development, currently being constructed in the North Sea, 30km off the coast of Suffolk in England. Development and construction is being led by innogy SE on behalf of the other project partners, including UK Green Investment Bank, Macquarie Capital and Siemens Financial Services. The Project will be fully operational in 2018. More information can be found at www.galloperwindfarm.com.

Positive impacts

ENVIRONMENT : Climate change & Resources Efficiency - This Project is expected to generate about 1 220 GWh/year of electricity from wind energy, avoiding greenhouse gases emissions – around 700 000 tCO2e/year – that would otherwise have been emitted by thermal sources in the country. This Project will generate power from wind energy and supply the national grid, reducing the need for importation and combustion of fossil fuels.

Negative impacts and their mitigations

SOCIAL: Cultural Heritage - It is considered that the potential for recovering archaeological remains during the onshore construction is high. A mitigation strategy will be developed in agreement with English Heritage and Suffolk County Council to ensure adverse impacts upon archaeological material are avoided. An archaeological Written Scheme of Investigation will be developed and will include a watching brief to ensure the recording of any features where disturbance is unavoidable. This will ensure that features are preserved by record.



SOCIAL: Economic Resettlement - During the construction, the operation and the decommissioning phase, the potential impacts identified are associated with vessel collisions; either with other vessels or with the wind farm structures themselves. As a consequence, a range of mitigation measures are applied, including operating procedures, marking / lighting, Notices to Mariners, Emergency Response Cooperation Plan and compliance with the relevant regulations these impacts are as low as reasonably possible.

ENVIRONMENT: Water quality - Mitigation measures, such as a site Environmental Management Plan and Pollution Control and Spillage Response Plans are implemented to face any potential cause of negative impacts.

ENVIRONMENT: Biodiversity - The Environmental Statement assessed impacts during construction in the offshore environment, associated with habitat loss, direct disturbance and displacement from construction activity (vessel activity, machinery operation and human presence) and in-direct disturbance effects through changes to prey supply and habitats. Operational impacts were assessed associated with the risk of collision mortality with turbine rotors, barrier effects, disturbance from operational maintenance, displacement of birds within and adjacent to the Galloper Wind Farm site and indirect effects as a result of prey availability and attraction to lit structures. The cable corridor and substation site have been planned to ensure that there are no direct impacts upon any international, European or nationally designated conservation sites. The cable corridor will, however, cross the Suffolk Shingle Beaches County Wildlife Site. The use of directional drilling techniques and sensitive management where vehicular access will be required along the shingle will minimize potential impacts to this locally designated site. Following mitigation a negligible impact is predicted

ENVIRONMENT: Landscape & Seascape - Much of the coast in the Sizewell area sits within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty. The design of the onshore substation includes a screening landform that will be created to the north, west and south of the substation. During operation there will be little evidence of the cable corridor as it will be buried below ground. The Area of Outstanding Natural Beauty is a site of high sensitivity and a major-moderate residual impact will remain up to 500m from the substation. Beyond these areas the significance of effects will reduce fairly rapidly to negligible with distance, and as vegetation, landform and development screens effects. With regard to the seascape effects of the offshore development, the primary source of potential impacts would arise from the operational phase, however, overall the presence of the turbines is predicted to have minor to negligible adverse impacts on the different landscape and visual receptors due to the fact that the turbines are located over 20km from shore..



LE WIND PROJECT

Project Description

The Project includes development of wind energy infrastructure to install up to approximately 180 Megawatts (MW) of clean power capacity to supplement the existing BC Hydro power grid. Development of the Project will include the construction of traffic access roads, sixty one (61) wind turbine generators and associated foundations, a 34.5 kilovolt (kV) electrical collector network, a substation, a 4 km long 230 kV transmission line to transfer power from the Project substation to the British Columbia Hydro grid.

Positive impacts

ENVIRONMENT: Climate & Resources Efficiency - The electricity generated by a wind energy facility in British Columbia, such as the Project, can offset GHG emissions that would otherwise have been produced by thermal sources in the province (includes natural gas, diesel, and wood), or imported from Alberta and the United States.

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - Wildlife habitat assessments were conducted throughout the area to predict habitat suitable for ungulates and furbearers. Radio telemetry data indicate that only the Quintette Caribou Herd is present in the vicinity of the Project. During operations, an adaptive management monitoring and follow-up program is proposed to manage uncertainty of the project effect on bats and birds.





NORDSEE ONE OFFSHORE WIND PARK

Project Description

Nordsee offshore wind farm is a 332 MW development located in the North Sea and within the German Exclusive Economic Zone ("EEZ"), approximately 40 km north of the Island of Juist in the German Bight. The Project is owned by Nordsee on GmbH

Positive impacts

ENVIRONMENT: Climate & Resources Efficiency - The project will generate 332 MW from a renewable, clean source of energy, saving tons of C02.

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - The project area lies outside designated main conservation sites protected by International designations as Natura 2000 or Special Protection Areas (SPA). It is compatible with the EU Habitat Directive and the EU Bird Directive. The noise generated during pile hammering works could have effect on the breeding behavior of sea living mammals. The project will hence have to adhere to strict noise limit requirements imposed by the BSH authority. The project has submitted also a noise mitigation concept including an on-site noise measurement concept and will implement a monitoring program related to this noise risk.







MATE OFFSHORE WINDPARK

Project Description

The Veja Mate offshore wind farm is a 400 MW development located in the German North Sea, approximately 95 km far from Borkum lighthouse. The Project will consist of 67 wind turbine generators, each with a capacity of 6 MW and a rotor of 154 m, together with associated infrastructure, including one offshore substation and a connection to the offshore substation.

Positive Impacts

ENVIRONMENT: Climate change & Resources Efficiency - Wind turbines are a clean source of renewable energy. The project will generate 400 MW (electricity needs of 400,000 homes).

Negative impacts and their mitigations

ENVIRONMENT: Water - The German Environmental authorities concluded that eventual possible adverse effects on the waters of the North Sea will be addressed by a package of measures set to avoid water pollution. Due to the small volumes of cooling water discharges expected, no significant impact is expected.

ENVIRONMENT: Biodiversity - The Project lies outside designated marine conservation sites protected by international designations. The Environmental Impact Assessment (EIA) has appropriately reported impacts in relation to preservation objectives of Natura 2000 areas such as the impact of piling noise on marine mammals, whom mitigation is required for authorities' permit.



MERKUR PROJECT WIND FARM

Project Description

The Merkur offshore wind farm is a 396 MW development in the North Sea and located within the German Exclusive Economic Zone, approximately 45 km north of the island of Borkum and in a water depth of 30m on average. It covers an area of 47 km² and is located in a specified zone for offshore wind farms. The Project is owned by Merkur Offshore GmbH.

Positive impacts

ENVIRONMENT: Climate & Resources Efficiency - The Project will generate enough clean energy to power around 5000,000 homes avoiding GHG emissions – around 960 000 tCO2e/year – that would otherwise have been emitted by thermal sources in the country (GHG reduction estimate obtained by using the European Investment Bank Methodology). Wind is a renewable, clean source of energy and does not use any natural resources as fuel

Negative impacts and their mitigations

ENVIRONMENT: Biodiversity - The Project area lies outside designated marine conservation sites protected by international designations. The Environmental Monitoring Plan developed by the Project as part of the Bundesamt für Seeschifffahrt und Hydrographie (BSH) permit obtention, specifies that the following will be carried out during the life of the Project: Monitoring birds and marine mammals (including vessel and flights, reporting and overheads on joint venture basis) & Monitoring of benthos and fish (benthos, epifauna, underwater structures, sediments, and fish).



ENVIRONMENT: Noise - Measures (coffer dam and post-lay bubble curtain) have been adopted, in accordance with BSH requirements, to mitigate the effect of pilling noise on marine mammals.

SOCIAL: Visual Impacts - The Project is located 45 km away from the nearest shore, hence no significant visual impact are anticipated.



LCK RENEWABLES WIND

Project Description

The Buddusò and Alà dei Sardi wind farm is located in one of the most windy areas of Italy within the municipalities of Buddusò and Alà dei Sardi in Sardinia. It extends across a plateau with elevation ranging between 700 m and 1000 m. The wind farm consists in 69 Enercon E70 turbines for a total effective production of 138MW. The project also includes a dedicated HV/MV substation and a 14 km HV underground line to connect the substation to the grid. The Project is in operation since 2011 and it represents the largest wind farm in Italy.

Positive impacts

ENVIRONMENT: Climate & Resource s Efficiency - According to the developer, the Project annually produces about 330 GWh, which corresponds to the energy consumed by 122.000 families and to an amount of 134 000 tones of CO2 saved.

Negative impacts and their mitigations

The Project has been in operation since 2011. No deviation from the E&S legal requirements applying to construction and operation have been reported by the company.

ENVIRONMENT: Biodiversity - The risk of impact on avifauna is limited in the northern part of the Project but somewhat higher in the southern portion due to the marked presence of trees. The EIA permit was released subject to the implementation of an Avifauna Monitoring Plan. The construction work also complied with a precautionary measure advised in the Environmental Impact Statement, to avoid work in the breeding season. No issue relative to high birds' mortality rates during the project's operation period has been reported so far by the Company.



ENVIRONMENT: Landscape - The turbines being located at high altitudes, the more external ones are visible from the village of Buddusò and Ala dei Sardi. A visual simulation was submitted to the competent authority as part of the permitting process, in response of which a requirement was placed for the removal of the most critical turbines in respect to the landscape, in the final Project design.



GENERIC POSITIVE IMPACTS ASSESSED FOR SOLAR PROJECTS (1) Access to Assessment of the impact within the project area of influence - on the population's accessibility to modern energy services SOCIAL => It refers to household access to electricity and clean cooking facilities energy Creation of Assessment of the number of permanent employment generated, directly or indirectly by the project => for solar projects, it concerns most specifically to the construction phase employment ENVIRONMENT Climate Assessment of the influence of the project on the level of greenhouse gases (GHG) emissions Resource Assessment of the use of non renewable resources during the whole project life. Non renewable resource refers to any natural resource that cannot be replenished by natural means at the same rates that it is consumed (e.g. minerals, etc.) Efficiency ECONOMIC Assessment on local economic development in low to low-medium income economies

GENERIC NEGATIVE IMPACTS ASSESSED FOR SOLAR PROJECTS (1)

ENVIRONMENT	Soil	Assessment –within the project area of influence – of the potential impact on the soils composition (e.g. contamination or removal of potential contaminants). => for solar projects, it concerns most specifically the construction phase
	Biodiversity	Assessment –within the project area of influence – of the potential gain or loss of biodiversity. => for solar projects, it refers to potential impacts on local wildlife & flora. The mitigation measures typically consists in the implementation of a monitoring of endangered and protected species; during construction and operational phase, revegetation of cleared areas, openings to allow the passing of animals, etc.

(1) List of generic expected positive and negative impacts that we systematically evaluate for the solar sector. Every project presents also specific potential impacts linked to the location and the project which are also identified and evaluated. Description of negative impacts management is included hereafter.





PARQUE SOLAR CONEJO

Project Description

Conejo Solar SpA is developing a 122 MW photovoltaic generating facility located on approximately 1,000 acres of public land administered by the Ministerio de Bienes Nacionales in Region of Antofagasta near Taltal, Chile. The project includes the following associated facilities: internal site roads with a total length of approximately 30 km, an approximately 10.2 km road for site access from Highway 5, an approximately 15-km 220-kV transmission line to connect to the national grid and various interchange ramps for incoming and outgoing traffic between Route 5.

Positive impacts

ENVIRONMENT: Climate & Resources Efficiency - With 122 MW of capacity, the Project is expected to generate substantial amounts of electricity from solar energy avoiding GHG emissions that would otherwise have been emitted by thermal sources in the country. The project will generate its own solar energy and supply to the national grid, reducing the need for importation and combustion fossil fuels.

Negative impacts and their mitigations

SOCIAL: Cultural Heritage - Aligned with IFC Performance Standards, measures were taken such as a permanent archaeological monitoring during construction, demarcation and fencing of the identified sites, registration of historical sites, salvage collections. In addition, the Project's archaeologist will be present onsite throughout the Project construction phase whenever there are earthmoving activities.

ENVIRONNEMENT: Biodiversity - A Wildlife Contingency Procedure was developed, that specifies actions to be taken in the event of encountering injured animals during construction or operation of the Project.









Project Description

Casablanca is a 50 MW Solar Thermal Plant located in Talarrubias (Badajoz, Spain). The plant includes a steam generator facility, a solar field consisting of parabolic trough collectors and a 7.5 hours heat storage system consisting of molten salts tanks. The plant's access to gas supply is provided by satellite LNG facility.

Positive impacts

ENVIRONMENT: Climate & Resources Efficiency - Concentrated solar plants, while partly relying on gas as a fuel source, are considered a clean renewable source of energy. Thanks to its heat storage system (molten salts tanks), the Casablanca plant can operate for up to 7.5 hours when there is no irradiance, therefore reducing gas consumption and associated GHG emissions.

The electricity generated by a solar thermal facility in Spain such as the Project, can offset GHG emissions that would otherwise have been produced by thermal sources **Negative impacts and their mitigations**

ENVIRONNEMENT: Water - A maximum annual volume of 970 000 m3 of surface water from the Gargáligas reservoir is granted to the plant, so the Project is not likely to put a strain on the underground aquifers. The streams that run through the Plant area have been redirected in such a way that it does not interfere with the normal shallow water cycle.

ENVIRONNEMENT: Biodiversity - The Project design has been refined so as to respect the native plant life and existing hydrographic channels. Local plant/tree species have been replanted in the Valdeloshitos streambed. The Project does not fall within the perimeters of the neighboring vast Natura 2000 area. The Project conforms to the legal environmental requirements for electric lines, including anti-collision measures for the design and the installation of bird deterrent devices, marking of ground cable; it will be equipped with lightning devices in case of material bird casualties.



MANIL DRA SOLAR FARM

Project Description

Manildra Solar Farm is a 50MWAC photovoltaic solar power plant located in NSW, Australia..

Positive impacts

ENVIRONMENT: Climate & Resource efficiency - The electricity generated by a solar PV facility in Australia such as the Project, can offset GHG emissions that would otherwise have been produced by thermal sources in Australia (includes coal, fuel and natural gas). According to FirstSolar, the project will be producing enough solar energy to power 14,000 homes and displace the equivalent of more than 91,000 metric tons of CO_2 emissions per year.

Negative impacts and their mitigations

SOCIAL: Cultural heritage - An assessment of potential Aboriginal and Historic Cultural Heritage was conducted by New South Wales Archaeology and NGH Heritage respectively. These comprised both desktop reviews of government databases, as well as on-ground surveys.

Several low-significance Aboriginal artefacts were discovered on-site, as well as a low-density artefact scatter. A historic stone cottage ruin was also identified. Impacts to these sites have been avoided through Project design. Additionally, actions to manage any previously undiscovered Aboriginal or historic sites or relics were integrated into the Construction Environmental Management Plan

ENVIRONMENT: Biodiversity - Ecological assessments of the Project site have noted the potential for impacts to protected species and ecological communities listed under the Threatened Species Conservation Act 1995. As a condition of the project approval, a Biodiversity Offset Plan is being implemented to offset predicted impacts to the Box Gum Endangered Ecological Community, and a Flora and Fauna Management Plan is being implemented to limit impacts to native flora and fauna species and habitat. Both of these plans have been approved by the Department of Planning and Environment.





4 CALCULATION METHODOLOGY OF THE GHG AVOIDED PRO-RATED INDICATOR



INDICATOR GHG AVOIDED PRORATED - CALCULATION METHODOLOGY

Step 1 : Calculation per project of

Capacity Estimation financed by Societe Generale (CE) = Drawn Outstanding (USD) / Capital Cost per KW (USD)

Where

- ✓ "Drawn Outstanding (USD)" as of 31th December 2019
- ✓ "Capital Cost per KW (USD)" links kW to total \$cost of each project
 - This factor is coming from IEA Table^(a) based on the renewable energy sector, project order date^(b) and geographical zone ^(c)

CO2 savings (t/a) contribution by projects =

(CE * CO2 Emission Savings ^(d)) / Capacity (in tW)

a)	Source IEA Table	WEO-2016 Power Generation Assumptions (IEA website: <u>http://www.worldenergyoutlook.org/weomodel/investmentcosts</u>)
b)	Project Order Date	Projects Signing Date
<i>c)</i>	Geographical Zone Rule	See next Appendix
d)	CO2 Emission Savings per year	Calculation using EIB's methodology at 31 Dec. 2019



INDICATOR GHG AVOIDED PRORATED - CALCULATION METHODOLOGY

Geographical Zone Rule

Project Area	IEA Area
EUROPE	Europe
NORTH AMERICA	United States
SOUTH AMERICA	Brazil
SOUTH EAST ASIA	Brazil (*)
AUSTRALIA AND OCEANIA	Japan
MIDDLE EAST	Middle East
AFRICA	Africa
CARIBBEAN	Brazil

(*) Proxy validated after testing it against "real" costs of the projects financed in South East Asia (Vietnam, Indonesia...) and after discussing with Marc Henry Lebrun (NAT/NRG FO in Hong Kong) deeply involved in power project financing in this region.



INDICATOR GHG AVOIDED PRORATED - CALCULATION METHODOLOGY

Step 2 : Aggregation of CO2 savings (t/a) contribution

 \sum CO2 savings (t/a) contribution of projects

Step 3 : Pro rata of CO2 savings (t/a) contribution for each 1000€ financed by investors

 \sum CO2 savings (t/a) contribution of projects / Total Drawn outstanding (EUR) * 1000





