# SOCIETE GENERALE POSITIVE IMPACT BONDS 2015 & 2016

# ANNUAL USE OF PROCEEDS REPORTING AS OF 31st of December 2017

Audited by EY





#### DISCLAIMER

The information contained in this document (the "Information") has been prepared by the Societe Generale Group (the "Group") solely for informational purposes. The Information is proprietary of the Group and confidential. This presentation and its content may not be reproduced or distributed to any other person or published, in whole or in part, for any purpose without the prior written permission of Societe Generale.

The Group has not separately reviewed, approved or endorsed the Information and accordingly, no representation, warranty or undertaking, express or implied, is made and no responsibility or liability is accepted by the Group as to the fairness, accuracy, reasonableness or completeness of the Information contained or incorporated by reference in this document or any other information provided by the Group.

The Group has and undertakes no obligation to update, modify or amend the Information or to otherwise notify any recipient if any information, opinion, projection, forecast or estimate set forth herein changes or subsequently becomes inaccurate. To the maximum extent permitted by law, Societe Generale and its subsidiaries, and their directors, officers, employees and agents, disclaim all liability and responsibility (including without limitation any liability arising from fault or negligence on the part of any of them) for any direct or indirect loss or damage which may be suffered by any recipient through use of or reliance of anything contained in or omitted from this presentation or any other information or material discussed in connection with such presentation.

Société Générale is a French credit institution (bank) authorised by the Autorité de Contrôle Prudentiel (the French Prudential Control Authority).



### CONTENTS

- KEY ENVIRONMENTAL & SOCIAL IMPACT INDICATORS
- II. INDICATIVE INFORMATION ON POSITIVE IMPACT BOND PROCEEDS ALLOCATION
- **III. USE OF PROCEEDS DESCRIPTION BY SECTOR** 
  - i. 2015 POSITIVE IMPACT BOND
  - ii. 2016 POSITIVE IMPACT BOND
- IV. CALCULATION METHODOLOGY OF THE GHG AVOIDED PRO-RATED INDICATOR
- v. EY ANNUAL AUDIT REPORT



#### I- KEY ENVIRONMENTAL & SOCIAL IMPACT INDICATORS

#### **CLIMATE BENEFITS**

	INDICATORS	2015 PI BOND	2016 PI BOND
Global indicator	Ex-ante estimated annual GHG emissions reduced or avoided in tCO2e	5 030 247	8 179 679
Pro-Rated indicator	Pro-Rated Ex-ante estimated annual GHG emissions reduced or avoided in tCO2e for 1K€ investment	0.92	0.79
Global indicator	Total Capacity of Renewable energy plant(s) in MW	2 725	3 744

Climate Benefits associated to the Positive Impact Finance assets selected as of 12/31/2017

#### 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 which takes into account: the capacity installed, the technology and the location of the project. As the allocated portfolio to the 2016 Positive Impact (PI) Bond includes larger projects in terms of capacity, the GHG emissions avoided are more important.

#### 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 31<sup>st</sup> December 2017. 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.

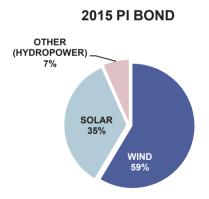
In fact the technology used within the renewable energy projects plays a significant role in the cost assessment per kW (according the IEA tables), and consequently in Société Générale's share of the funding. As for example, offshore wind projects are highly priced according to the IEA tables; this technology representing more than half of all projects financed through 2016 Positive Impact Bond. The 2015 Positive Impact Bond use of proceeds show a more diversified portfolio in terms of type of renewable energy funded.

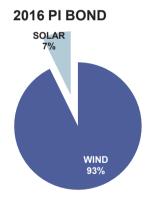


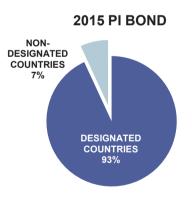
### I- KEY ENVIRONMENTAL & SOCIAL IMPACT INDICATORS

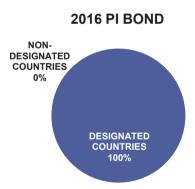
Source of Renewable Energy	Capacity (in MW)		
POSITIVE IMPACT BOND	2015 PI BOND	2016 PI BOND	
Wind	1 596	3 472	
Solar	949	272	
Other (Hydropower)	180	-	
Total Capacity (in MW)	2 725	3 744	

Geographical area	Capacity (in MW)		
POSITIVE IMPACT BOND	2015 PI BOND	2016 PI BOND	
Designated Countries (*)	2 545	3 744	
Non-Designated Countries	180	-	
Total Capacity (in MW)	2 725	3 744	









(\*) 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.

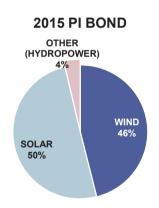


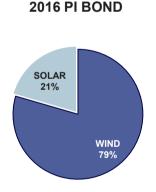
### II - PORTFOLIO OF SELECTED POSITIVE IMPACT ASSETS

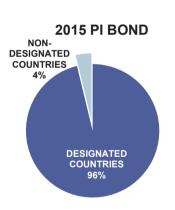
#### As of December 31st 2017

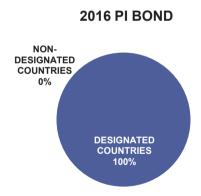
Source of Renewable Energy	Outstanding (in MEUR)		
POSITIVE IMPACT BOND	2015 PI BOND	2016 PI BOND	
Wind	242	426	
Solar	264	109	
Other (Hydropower)	19	-	
Total Outstanding (in MEUR)	525	535	

Geographical area	Outstanding (in MEUR)		
POSITIVE IMPACT BOND	2015 PI BOND	2016 PI BOND	
Designated Countries (*)	506	535	
Non-Designated Countries	19	-	
Total Outstanding (in MEUR)	525	535	









#### TOTAL OUTSTANDING OF SELECTED POSITIVE IMPACT FINANCE ASSETS

EUR 525M & EUR 535M > 100% of Positive Impact Bond proceeds

(\*) 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.



#### SOCIETE GENERALE 2015 POSITIVE IMPACT BOND

### II- PORTFOLIO OF SELECTED POSITIVE IMPACT ASSETS

■ 26 Positive Impact Finance assets selected as of 12/31/2017 and reviewed by an external auditor (EY)

		Signing	Maturity		Underlying physical assets		
N°	Positive Impact Finance Assets	Date	Date	SG Initial commitment	Capacity (in MW)	Source of renewable energy	Geographical area
1	BOW LAKE WIND PROJECT	Jul-14	Jan-23	CAD 40M	58	Wind	Americas
2	K2 ONTARIO WIND FARM	Mar-14	Dec-22	CAD 52M	270	Wind	Americas
3	GRAND RENEWABLE WIND PROJECT	Sep-13	Mar-22	CAD 35M	149	Wind	Americas
4	ARMOW WIND FARM	Oct-14	Feb-23	CAD 65M	179	Wind	Americas
5	WIND FARM CROIX BENJAMIN	Aug-13	Dec-29	EUR 19M	28	Wind	Europe
6	SOUTH KENT	Mar-13	Aug-21	CAD 50M	270	Wind	Americas
7	SILVERTON WIND FARM	Jan-17	Mar-22	AUD 45M	200	Wind	Asia Pacific
8	ONSHORE WIND FARM (*)	2017				Wind	Europe
9	SERRA CARPANETO 3 WIND FARM	Mar-17	Dec-34	EUR 11M	16	Wind	Europe
10	MOUNT EMERALD WIND FARM	Oct-16	Nov-23	AUD 65M	180	Wind	Asia Pacific
11	OFFSHORE WIND FARM (*)	2017	-	<u>-</u>	-	Wind	Europe
12	PHOTOVOLTAIC PLANT (*)	2016	-	<u>-</u>	-	Solar	Asia Pacific
13	COPPER MOUNTAIN II SOLAR PV	May-13	May-23	USD 66M	150	Solar	Americas
14	COPPER MOUNTAIN III SOLAR PV	Mar-14	May-25	USD 55M	250	Solar	Americas
15	MASSANGIS 2 SOLAR POWER PLANT (*)	Mar-17	Jun-31		20	Solar	Europe
16	CRUCEY1 SOLAR POWER PLANT (*)	Mar-17	May-31		36	Solar	Europe
17	NEOEN SOLAR PORTFOLIO – LUXEY SOLARPHOTON	Mar-14	Sep-32	EUR 8M	9	Solar	Europe
18	NEOEN SOLAR PORTFOLIO – GAREIN SOLARPHOTON	Mar-14	Dec-32	EUR 10M	10	Solar	Europe
19	NEOEN SOLAR PORTFOLIO – CLAOUZIQUET CENTRALE SOLAIRE	Mar-14	Oct-32	EUR 6M	7	Solar	Europe
20	NEOEN CESTAS	Nov-14	Apr-34	EUR 368M	300	Solar	Europe
21	CURBANS SOLAR PV PLANT	Jun-12	May-29	EUR 21M	24	Solar	Europe
22	TOUL ROSIERES SOLAR PV PLANT (*)	Mar-17	May-31		55	Solar	Europe
23	EDF EN CENTRALES PHOTOVOLTAIQUES TOITURES (*)	Oct-12	Jan-30	<u> </u>	7	Solar	Europe
24	ROCHEFORT DU GARD SOLAR PLANT	Apr-13	Sep-34	EUR 21M	11	Solar	Europe
25	PHOTOVOLTAIC PLANT (*)	2017				Solar	Europe
26	ASAHAN-1 HYDROPOWER PLANT	May-14	Sep-27	USD 30M	180	Other (Hydropower)	Asia Pacific

<sup>(\*)</sup> For confidentiality reasons, project information can not be disclosed



### II- PORTFOLIO OF SELECTED POSITIVE IMPACT ASSETS

■ 18 Positive Impact Finance assets selected as of 12/31/2017 and reviewed by an external auditor (EY)

N°	Positive impact Finance assets	Positive impact Finance assets Signing Date Maturi	Maturity Date	SG initial	Underlying physical assets			
IN .	Positive impact Finance assets	Signing Date Maturity Date		commitment	Capacity (in MW)	Source of renewable energy	Geographical area	
1	BALTIC 2 OFFSHORE WIND FARM (*)	Jan-15	Apr-27		288	Wind	Europe	
2	OFFSHORE WIND FARM (*)	2016		ļ	-	Wind	Europe	
3	DUDGEON WIND FARM	May-16	Jun-32	GBP 72M	402	Wind	Europe	
4	BLOCK ISLAND WIND FARM	Feb-15	Mar-24	USD 248M	30	Wind	Americas	
5	GALLOPER OFFSHORE WIND FARM	Oct-15	Jun-33	GBP 101M	336	Wind	Europe	
6	HORNSDALE WINDFARM	Aug-15	Feb-35	AUD 65M	100	Wind	Asia Pacific	
7	HORNSDALE WIND FARM HWF2	Jun-16	Jun-37	AUD 52M	100	Wind	Asia Pacific	
8	MEIKLE WIND FARM	Jun-15	May-24	CAD 52M	180	Wind	Americas	
9	NORDSEE ONE OFFSHORE	Mar-15	Dec-29	EUR 40M	332	Wind	Europe	
10	VEJA MATE OFFSHORE	Aug-15	Dec-29	EUR 45M	400	Wind	Europe	
11	ONSHORE WIND FARM (*)	2016	-		-	Wind	Europe	
12	MERKUR OFFSHORE	Aug-16	Dec-31	EUR 71M	396	Wind	Europe	
13	HORNSDALE WIND FARM HWF3	Feb-17	Dec-37	AUD 50M	109	Wind	Asia Pacific	
14	FALCK RENEWABLES WIND LTD	May-17	Jun-27	EUR 13M	138	Wind	Europe	
15	PARQUE SOLAR CONEJO	Aug-15	Nov-31	USD 66M	122	Solar	Americas	
16	SERREZUELA SOLAR II SL	Dec-15	Dec-31	EUR 34M	50	Solar	Europe	
17	MANILDRA SOLAR FARM	Mar-17	Mar-22	AUD 41M	50	Solar	Asia Pacific	
18	PHOTOVOLTAIC PLANT (*)	2017	-	_	-	Solar	Asia Pacific	





# SOCIETE GENERALE 2015 POSITIVE IMPACT BOND

**USE OF PROCEEDS DESCRIPTION** 



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		
ENT	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			

GENEF	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				
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.				

<sup>(1)</sup> 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.





## **BOW LAKE WIND**

#### **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.

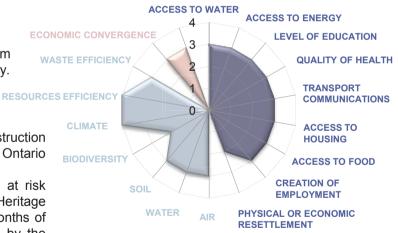
#### **Positive impacts**

**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.



### **CONTARIO WIND PROJECT**

#### **Project Description**

K2 Wind Ontario is a partnership between Samsung Renewable Energy, Inc., Pattern Energy Group LP and Capital Power LP, which will have the capacity to generate 270 MW of renewable electricity from 140 Siemens model SWT-2.3 wind turbines. Commercial operation is expected to commence in mid-2015.

#### **Positive impacts**

**ENVIRONMENT: Climate & Resource efficiency -** the wind farm generates 270 MW of power from a renewable, clean fuel source of energy.

Production capacity generates enough energy to power 100 000 Ontario homes each year.

#### Negative impacts and their mitigations

**ENVIRONMENT**: **Biodiversity** - Location of all the turbines in agricultural lands, outside of wetlands and naturally vegetated areas to preclude disturbance to local flora, small mammals and amphibians, natural habitat, and corridor functions.

ACCESS TO WATER ACCESS TO ENERGY LEVEL OF EDUCATION QUALITY OF HEALTH WASTE EFFICIENCY **TRANSPORT** RESOURCES EFFICIENCY **COMMUNICATIONS** CLIMATE ACCESS TO HOUSING **BIODIVERSITY ACCESS TO FOOD CREATION OF** SOIL **EMPLOYMENT** PHYSICAL OR ECONOMIC

**SOCIAL:** Resettlement - Landowners are being financially compensated for the lease of the private lands. For other landowners with homes within one km of Project infrastructure, development of the Community Renewable Energy Benefit –annual payment to qualifying residents over the life of the Project.



### GRAND RENEWABLE WIND PROJECT

#### **Project Description**

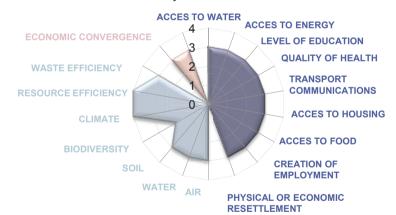
The Grand Renewable Wind Project is a 148.62 MW wind farm. The Project is located on a mix of private and Government-owned lands in Haldimand County (Southern Ontario), approximately 100 km southwest of Toronto. It comprises 67 Siemens SWT 2.3-101 wind turbine generators. The Project will sell its generated output through a 20-year PPA with the Ontario Power Authority.

#### **Positive impacts**

**ENVIRONMENT: Climate & Resource efficiency -** the wind farm generates 150 MW of power from a renewable, clean fuel source of energy.

Production capacity generates enough energy to power 55,000 Ontario homes per year.

Compared to coal-fired generation, GRW will offset approximately 842,000 tonnes of CO2 each year, the equivalent of taking nearly 165,000 cars off the roads, and conserve enough water to meet the needs of approximately 23,600 Ontarians.



#### Negative impacts and their mitigations

**ENVIRONMENT:** Biodiversity - A post-construction wildlife monitoring program is been conducted for 1) mortality of breeding birds, migratory land birds, migratory raptors (fall) and bats; and 2) the effects of disturbance on breeding birds, migratory landbirds and woodland and wetland hydrology.



### ARMOW WIND FARM

#### **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.

#### ACCES TO WATER ACCES TO ENERGY LEVEL OF EDUCATION QUALITY OF HEALTH **WASTE EFFICIENCY TRANSPORT** COMMUNICATIONS CLIMATE **ACCES TO HOUSING** ACCES TO FOOD **BIODIVERSITY CREATION OF EMPLOYMENT** WATER PHYSICAL OR ECONOMIC AIR CULTURAL RESETTLEMENT **HERITAGE**

#### **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.



### IND FARM CROIX BENJAMIN

#### **Project Description**

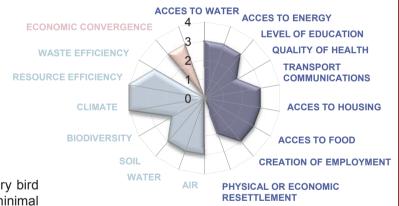
The Project consists of the design, construction, operation and maintenance of an onshore wind farm for a nominal capacity of 28MW in Champagne Ardenne region (France). The Project will implement 14 V112 2 MW turbines supplied by Vestas. The Project has entered into Power Purchase Agreement with EDF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

#### **Positive impacts**

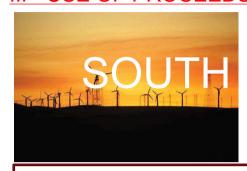
**ENVIRONMENT: Climate & resource efficiency -** the wind farm generates 28 MW of power from a renewable, clean fuel source of energy. Production capacity generates enough energy to power 31,226 households.

#### 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.



### KENT

#### **Project Description**

Development of a wind farm project, located on private land in the Municipality of Chatham-Kent in Southwestern Ontario with a nominal capacity of 270 MW. The Project will consist of 124 Siemens SWT-2.3-101 wind turbines. Project output will be sold under a 20-year power purchase agreement with the Ontario Power Authority.

#### **Positive impacts**

**ENVIRONMENT: Climate & resource efficiency -** the wind farm RESOURCE EFFICIENCY generates 270 MW of power from a renewable, clean fuel source of energy.

Production capacity generates enough energy to power 100,000 Ontario homes.

The project offsets 842 tonnes of CO2, the equivalent of taking 148,500 cars off the roads when compared to coal-fired generation.

#### ACCES TO WATER **ACCES TO ENERGY ECONOMIC CONVERGENCE LEVEL OF EDUCATION WASTE EFFICIENCY QUALITY OF HEALTH** TRANSPORT COMMUNICATIONS CLIMATE **ACCES TO HOUSING** ACCES TO FOOD **BIODIVERSITY CREATION OF** SOIL **EMPLOYMENT** WATER PHYSICAL OR ECONOMIC RESETTLEMENT

#### Negative impacts and their mitigations

**ENVIRONMENT:** Biodiversity - Appropriate monitoring measures, based on Ministry of Natural resources & Forestry guidelines (MNR, 2011b) have been taken regarding avifauna. Following the construction, a 3 years of mortality monitoring for birds and bats will include the following measures:

If mortality thresholds for bats are exceeded, operational mitigation will include: changing the wind turbine cut-in speed to 5.5 m/s or feathering of the wind turbine blades when wind speeds are below 5.5 m/s.

If mortality thresholds for birds are exceeded, operational mitigation will include shutdown of specific turbines, feathering of blades.





#### **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.

#### ACCES TO WATER ACCES TO ENERGY **ECONOMIC CONVERGENCE** LEVEL OF EDUCATION LANDSCAPE QUALITY OF HEALTH TRANSPORT NOISE COMMUNICATIONS **ACCES TO HOUSING WASTE EFFICIENCY** ACCES TO FOOD RESOURCE EFFICIENCY CREATION OF EMPLOYMENT CLIMATE PHYSICAL OR ECONOMIC BIODIVERSITY RESETTLEMENT **CULTURAL HERITAGE** WATER AIR

#### **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.



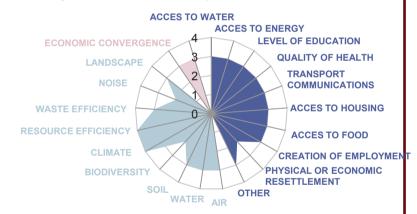
### SERRA CARPANETO 3

#### **Project Description**

16MW wind farm located in the Basilicata Region (South of Italy). The wind farm is already built and entered into operation in November 2016.

#### Positive impacts

**ENVIRONMENT: Climate & resource efficiency** - Wind turbines are a clean source of renewable energy. The CO2e emission savings estimated using the European Investment Bank methodology amount to 18,000 t/y..

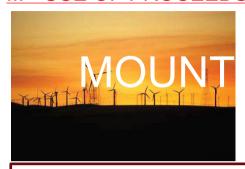


#### Negative impacts and their mitigations

**ENVIRONMENT:** Biodiversity - Project impacts have been estimated by competent local bodies to be acceptable in the context the project.

**SOCIAL:** Resettlement - According to the developer, most land parcels have been acquired with the consensus of the owner. Some agricultural lands have however been expropriate in compliance with an Expropriation Plan. All relevant permits were obtained.

**SOCIAL: Noise** - The conclusions of the noise impact report are positive and don't highlight significant issues. Should exceedances be measured, a curtailment strategy will be put in place.



### **EMERALD**

#### **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.

#### ACCES TO WATER ACCES TO ENERGY **ECONOMIC CONVERGENCE** LEVEL OF EDUCATION **LANDSCAPE QUALITY OF HEALTH TRANSPORT** NOISE COMMUNICATIONS **ACCES TO HOUSING** WASTE FEFICIENCY **ACCES TO FOOD** RESOURCE EFFICIENCY CREATION OF EMPLOYMEN CLIMATE PHYSICAL OR ECONOMIC BIODIVERSITY RESETTLEMENT **CULTURAL HERITAGE** WATER AIR

#### Negative impacts and their mitigations

**ENVIRONMENT:** Noise - 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.

GENI	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			

GENI	GENERIC NEGATIVE IMPACTS ASSESSED FOR SOLAR PROJECTS (1)					
NMENT	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				
ENVIRON	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.				

<sup>(1)</sup> 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.

#### Positive impacts

**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.

#### ACCES TO WATER **ACCES TO ENERGY** LEVEL OF EDUCATION QUALITY OF HEALTH WASTE EFFICIENCY TRANSPORT COMMUNICATIONS RESOURCE EFFICIENCY **ACCES TO HOUSING** CLIMATE ACCES TO FOOD **BIODIVERSITY** CREATION OF EMPLOYMENT SOIL PHYSICAL OR ECONOMIC WATER RESETTLEMENT

#### **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.





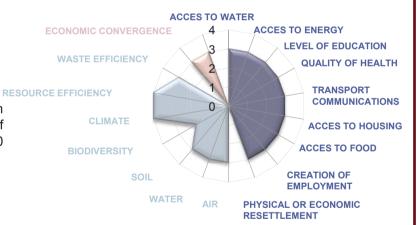
# COPPER MOUNTAIN III SOLAR PV

#### **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

#### Positive impacts

**ENVIRONMENT: Climate & Resource efficiency -** the solar farm generates 250 MW of power from a renewable, clean fuel source of energy. Production capacity generates enough energy to power 80,000 homes.



#### **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

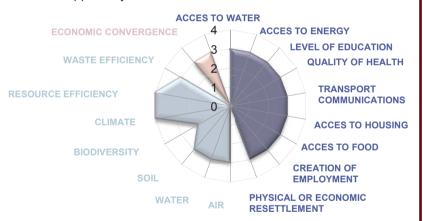
#### **Project Description**

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.

#### **Positive impacts**

**ENVIRONMENT: Climate & Resource efficiency -** The photovoltaic solar plant generates 20 MW of power from a renewable, clean fuel source of energy.

Production capacity generates enough energy to power approximately 9.300 households.



#### **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**

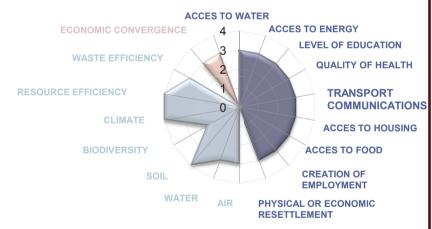
Refinancing of the Crucey 1 Project, a 36 MWp photovoltaic power plant located in Crucey village, Eure-et-Loir department. The Project is part of a larger fixed ground-mounted photovoltaic power plant development composed of 5 independent sub-projects comprising 60 MWp of peak capacity. The Project is 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.





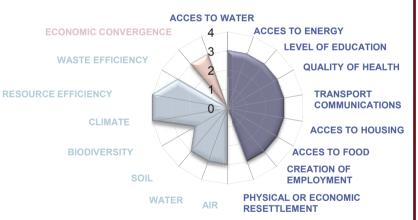
### **UXEY SOLARPHOTON**

#### **Project Description**

The project is part of a portfolio of solar power and consists in the financing of an 8.57 MW solar plant in Luxey located in the Landes region. The plant is equipped with Yingli Panda 72 cell NH 315 Wp modules and power generated by the project will be sold to EDF under a 20-years PPA.

#### **Positive impacts**

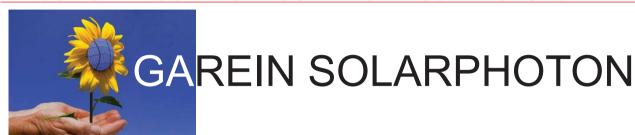
**ENVIRONMENT: Climate & Resource efficiency -** The solar plant generates 8.57 MW of power from a renewable, clean fuel source of energy.



#### Negative impacts and their mitigations

**ENVIRONMENT:** Biodiversity - The project has been reworked to avoid most of the sensitive areas and community habitats destroyed will be relocated in other areas of the department. The project includes the creation of a forest in the neighboring Dordogne as compensation measure for tree clearing.

As the project area has been devastated by a thunderstorm, a preliminary treatment of ploughting and an annual scything will enable the development of the natural environment of the area.

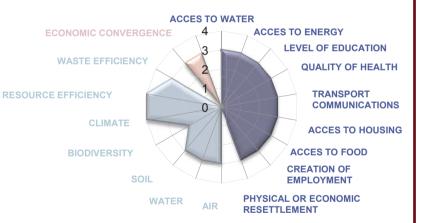


#### **Project Description**

The project is part of a portfolio of solar power and consists in the financing of a 10.12 MW solar plant in Garein located in the Landes region. The PV is equipped with Sunpower E327 modules and power generated by the project will be sold to EDF under a 20-years PPA;

#### **Positive impacts**

**ENVIRONMENT: Climate & Resource efficiency -** the solar plant generates 10.12 MW of power from a renewable, clean fuel source of energy.



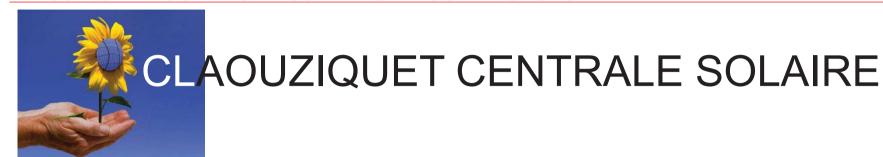
#### Negative impacts and their mitigations

**ENVIRONMENT:** Biodiversity - The project has been reworked to avoid most of the sensitive areas.

As the area has been devastated by a thunderstorm, a preliminary treatment of ploughting and an annual scything will enable the development of the natural environment of the area.

Creation of a forest of superior surface in Dordogne as compensation measures for tree clearing.



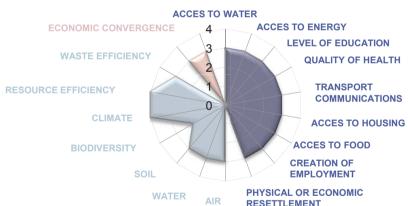


#### **Project Description**

The project is part of a portfolio of solar power and consists in the financing of a 6.72 MW solar plant in Ygos-Saint-Saturnin located in the Landes region. The PV is equipped with Yingli Panda 72 cell NH 315 Wp modules and power generated by the project will be sold to EDF under a 20-years PPA.

#### **Positive impacts**

**ENVIRONMENT: Climate & resource efficiency -** the solar plant generates 6.72 MW of power from a renewable, clean fuel source of RESOURCE EFFICIENCY energy.



#### **Negative impacts and their mitigations**

**ENVIRONMENT:** Biodiversity - The project has been reworked to avoid most of the sensitive areas and community habitats destroyed has been relocated in other areas of the department with the creation of a forest in Gironde of equal size as compensation measure for tree clearing.

As the project area has been devastated by a thunderstorm, a preliminary treatment of ploughting and an annual scything will enable the development of the natural environment of the area.





#### **Project Description**

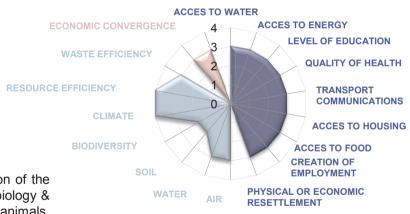
The project entails the construction of the Cestas Solar Park located in municipality of Cestas, Bordeaux, France. The solar park will have capacity of 300MW and involve 72-cell multi crystalline solar modules provided by Yingli Green Energy. The park is being constructed on a 250 hectare site.

#### **Positive impacts**

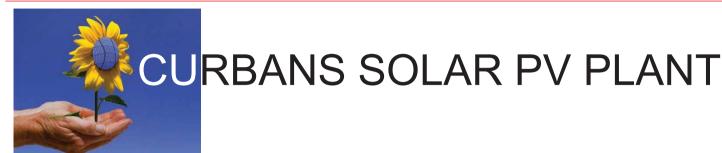
**ENVIRONMENT: Climate & resource efficiency -** the solar park generates 300 MW of power from a renewable, clean fuel source of energy. Annual estimated production will cover the entire households' needs from Bordeaux

#### 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.



**ENVIRONMENT:** Soil - A drainage system has been carried out to avoid confinement of groundwater around the modules. Vegetation between PV modules areas is expected to reduce the risk of erosion and facilitate the infiltration of rain water at the site.

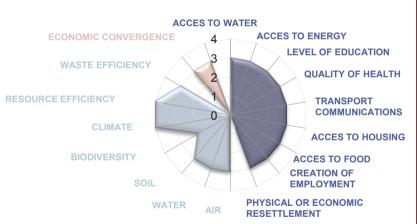


#### **Project Description**

The project consists of three ground-based photovoltaic power plants and represents a total installed capacity of 24.4 MW near Curbans in France.

#### **Positive impacts**

**ENVIRONMENT: Climate & resource efficiency -** Curbans Photovoltaic plant generates 24.4MW of power from a renewable, clean fuel source of energy. The annual production generates enough energy to meet the annual consumption needs of 10,500 households.



#### Negative impacts and their mitigations

**ENVIRONMENT:** Biodiversity - The project is very close to the Natura 2000 area "Venterol-Piegut-Grand vallon" but there is no significant negative impact on the site avifauna as mentioned in the impact assessment of Natura 2000 area performed by the environmental consultant Naturalia.



## TOUL ROSIERES SOLAR PV PLANT

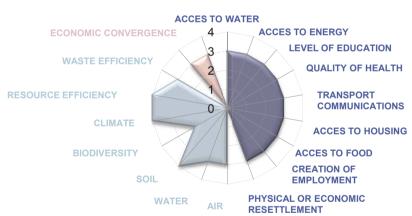
#### **Project Description**

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.



# CENTRALE PHOTOVOLTAIQUES TOITURES

#### **Project Description**

Financing of the construction and operation of a portfolio of 11 building-integrated photovoltaic plants set up on the roof of industrial and administrative building, total nominal capacity 7.1 MW in France. Regarding the PV modules, the Portfolio is equipped with technologies such as (i) mono or multi-crystalline silicon (from Suntech and Photowatt) representing 92.7% of the total nominal capacity, (ii) CdTe (First Solar).

#### **Positive impacts**

**ENVIRONMENT: Climate & Resource efficiency -** The portfolio of 11 building-integrated photovoltaic plants generates 7.1 MW of power from RESOURCE EFFICIENCY a renewable, clean fuel source of energy.

#### ACCES TO WATER **ACCES TO ENERGY ECONOMIC CONVERGENCE** LEVEL OF EDUCATION WASTE EFFICIENCY QUALITY OF HEALTH TRANSPORT COMMUNICATIONS CLIMATE ACCES TO HOUSING ACCES TO FOOD **BIODIVERSITY CREATION OF** SOIL **EMPLOYMENT** PHYSICAL OR ECONOMIC WATER RESETTLEMENT

#### **Negative impacts and their mitigations**

**ENVIRONMENT:** All potential social and environmental conditions & assessments (archeological, natural heritage, noise reports...) were examined independently and no significant impacts or risks have been identified





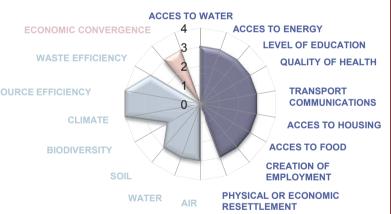
# DEHEFORT DU GARD SOLAR PLANT

#### **Project Description**

Financing project of a 10,99 MWp ground-mounted photovoltaic solar plant located in the town of Rochefort du Gard (near Avignon, France). The project is equipped with thin-film First Solar modules and power generated by the project will be sold to EDF under a 20-years power purchase agreement.

#### **Positive impacts**

**ENVIRONMENT: Climate & Resource efficiency -** the solar plant generates 10.99 MW of power from a renewable, clean fuel source of energy. The plant production per year matches approximately with the RESOURCE EFFICIENCY annual consumption of the inhabitants of the district.



#### Negative impacts and their mitigations

**ENVIRONMENT:** Biodiversity - The ecological assessment identified only two moderately threatened species directly connected with the site, the western green lizard (Lacerta bilineata), a common species in the south of France but protected nationwide, and the downy rest-harrow (Ononis pubescens), a decisively important species for assigning Site of Community Importance status in Languedoc-Roussillon but located in a rural area. A monitoring is to be performed. The study puts forward recommendations in relation to the works (period, removal of plants, etc.), specific recommendations (such as preservation of the stand of downy rest-harrow and fencing that allows small animals to pass through) and recommendations concerning the maintenance that will be required.

### III - USE OF PROCEEDS DESCRIPTION - HYDROPOWER SECTOR

GENERIC POSITIVE IMPACTS ASSESSED FOR HYDROPOWER PROJECTS(1)					
COCIAI	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			
SOCIAL	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	T 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)						
ENVIRONMENT	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				
	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.				
	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.				

<sup>(1)</sup> 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.



#### III - USE OF PROCEEDS DESCRIPTION - HYDROPOWER SECTOR



# 1 HYDROPOWER PLANT

#### **Project Description**

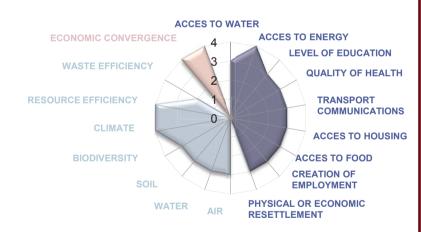
Refinancing project of the 2 x 90 MW run-of-the river hydroelectric power plant in order to support the operation of the 180-MW Asahan 1 hydropower project in North Sumatra (Indonesia).

#### **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.

# SOCIETE GENERALE 2016 POSITIVE IMPACT BOND

**USE OF PROCEEDS DESCRIPTION** 



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)				
Ţ	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		
SOCIAL	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	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.		

<sup>(1)</sup> 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.





## ALTIC 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**

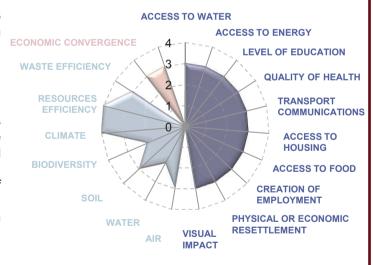
**ENVIRONMENT: Climate & Resources Efficiency -** the wind farm generates 288 MW of power from a renewable, clean fuel source of energy which is enough energy to power 340,000 homes per year.

#### 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





## DUDGEON OFFSHORE WIND FARM

#### **Project Description**

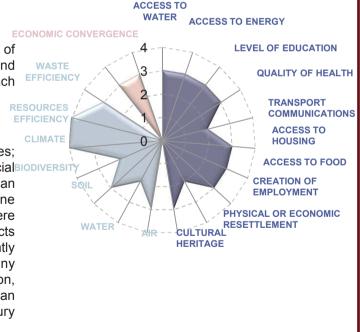
Dudgeon Offshore Wind Farm will be constructed with 67 wind turbines, each with a capacity of 6 MW, totaling 402 MW installed generation capacity. The North Sea project site is located 32 km offshore, north of the town of Cromer in North Norfolk, and 20 km north-east of the Sheringham Shoal Offshore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





## OCK ISLAND WIND FARM

#### **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.

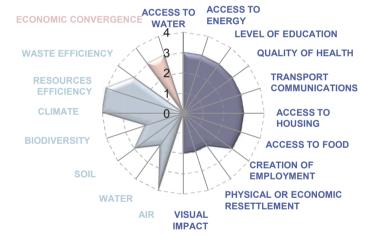
**ENVIRONMENT:** Air quality - Project could effectively displace the diesel-fired generators that are currently used to power the Block Island and their associated emissions of air pollutants.

#### 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.qalloperwindfarm.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.

**ENERGY** ECONOMIC CONVERGENCE WATER LEVEL OF EDUCATION LANDSCAPE QUALITY OF HEALTH WASTE **EFFICIENCY** 2 **TRANSPORT** COMMUNICATIONS RESOURCES **EFFICIENCY ACCESS TO** HOUSING CLIMATE **ACCESS TO FOOD BIODIVERSITY CREATION OF** SOIL **EMPLOYMENT** PHYSICAL OR ECONOMIC CULTURAGE RESETTLEMENT AIR HERITAGE

**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..





## FORNS DALE WIND FARM, Stage 1 & 2

#### **Project Description**

Development of the 100 MW first stage and 100MW stage 2 of the Hornsdale Wind Farm Project, located near Jamestown in South Australia (200 km north of Adelaide)

ACCESS TO WATER ACCESS TO ENERGY

#### **Positive impacts**

**ENVIRONMENT: Climate & Resource s Efficiency -** Wind is a renewable, clean source of energy; the operation of wind turbines does not give rise to CO2 emissions. KfW IPEX reported that upon completion, the Hornsdale project will supply green energy for around 70,000 Australian homes

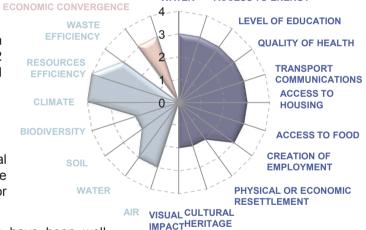
#### **Negative impacts and their mitigations**

**SOCIAL:** Cultural Heritage - European and aboriginal archaeological and cultural heritage studies and surveys have been undertaken and identified only one archaeological site and four isolated artefacts outside the footprint marked for ground disturbance.

**ENVIRONMENT: Biodiversity** - Ecologically significant fauna and flora areas have been well defined during a series of site surveys he turbine and other infrastructure locations were determined to avoid threatened ecological communities and other areas of high conservation value

**ENVIRONMENT:** Noise - Noise level from Stage I and Stage II wind turbines will comply with the applicable base noise criteria at all receiver locations.

**ENVIRONMENT:** Landscape - The visual analysis determined that the visual effect will predominantly be very low to moderate.







## WIND PROJECT

#### **Project Description**

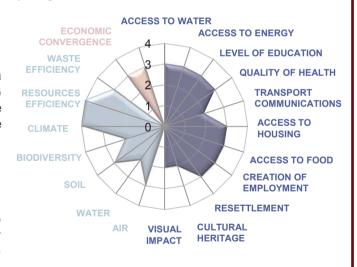
The Project includes development of wind energy infrastructure to install up to approximately 180 Megawatts (MW) of clean power capacity to supplement the existing BC Hydro power grid. Development of the Project will include the construction of traffic access roads, sixty one (61) wind turbine generators 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.





## ORDSEE ONE OFFSHORE WIND PARK

#### **Project Description**

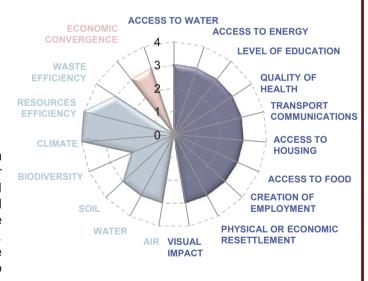
Nordsee offshore wind farm is a 332 MW development located in the North Sea and within the German Exclusive Economic Zone ("EEZ"), approximately 40 km north of the Island of Juist in the German Bight. The Project is owned by Nordsee on GmbH

#### **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.

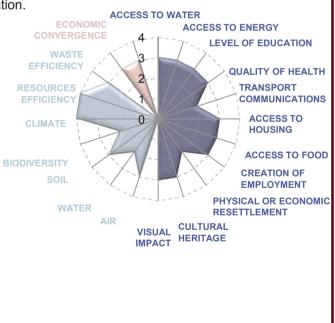
#### **Positive Impacts**

**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.





## **ERKUR 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.

ACCESS TO WATER

#### 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).

**ACCESS TO ENERGY ECONOMIC CONVERGENCE** LEVEL OF EDUCATION WASTE **EFFICIENCY** QUALITY OF HEALTH RESOURCES **TRANSPORT EFFICIENCY** COMMUNICATIONS **ACCESS TO** CLIMATE HOUSING **BIODIVERSITY** ACCESS TO FOOD **CREATION OF EMPLOYMENT** RESETTLEMENT WATER **CULTURAL HERITAGE** 

**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.



## HORNS DALE WIND FARM, Stage 3

#### **Project Description**

Development of the 109 MW stage 3 of the Hornsdale Wind Farm Project, located near Jamestown in South Australia (200 km north of Adelaide)

#### **Positive impacts**

ENVIRONMENT: Climate & Resource s Efficiency - Wind is a renewable, clean source of energy; the operation of wind turbines does not give rise to CO2 emissions. KfW IPEX reported that upon completion, the Hornsdale project will supply green energy for around 210,000 Australian homes

#### Negative impacts and their mitigations

**SOCIAL:** Cultural Heritage - Multiple cultural heritage surveys were undertaken for European and Indigenous heritage and the Ngadjuri and Nukunu parties were consulted as part of the overall HWF development. The key finding of the assessment was that there is a moderate likelihood that Aboriginal Heritage sites will be identified in the proposed project area. Further site specific assessment was recommended. The independent consultant confirmed that HWF has followed these recommendations on Stage I and II and committed to continue for Stage III.

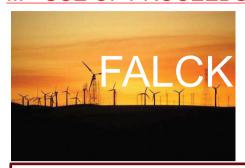
ACCESS TO WATER **ACCESS TO ENERGY LEVEL OF EDUCATION** LANDSCAPE **QUALITY OF HEALTH** AND FLICKER TRANSPORT COMMUNICATIONS **ACCESS TO HOUSING** WASTE ACCESS TO FOOD RESOURCES **CREATION OF EFFICIENCY EMPLOYMENT** CLIMATE PHYSICAL OR ECONOMIC SOIL WATER AIR CULTURAL

**ENVIRONMENT: Biodiversity** - No nationally threatened ecological communities or flora species of national conservation significance were observed within the Stage III footprint. The due diligence report initially identified that there was some encroachment of five (5) WTGs on Eucalypt Woodland Areas (including 20 m buffer). It was later confirmed that micro-siting, including turbine relocation, had already been completed and the turbines final positions approved by the Native Vegetation Council.

**ENVIRONMENT:** Noise - Findings from the noise assessment indicate that the predicted noise level from all stages of the HWF will comply with the applicable base noise criteria at all receiver locations for all assessed hub height wind speeds. The assessment comprised a cumulative noise impact assessment for Stages I, II and III.

**ENVIRONMENT:** Landscape - Due to the fact that the additional Stage III WTGs have to be viewed against the backdrop of the Stages I & II WTGs, the assessment concluded that Stage III does not present a significant (additional) visual impact.





## A CK 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.

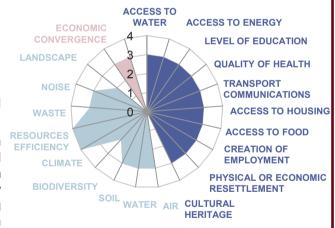
#### **Positive impacts**

**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.

## III - USE OF PROCEEDS DESCRIPTION – SOLAR SECTOR

GENERIC 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				
	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.)				
Assessment on local economic development in low to low-medium income economies						

GENERIC NEGATIVE IMPACTS ASSESSED FOR SOLAR PROJECTS (1)						
MENT	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				
ENVIRON	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.				

<sup>(1)</sup> 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.

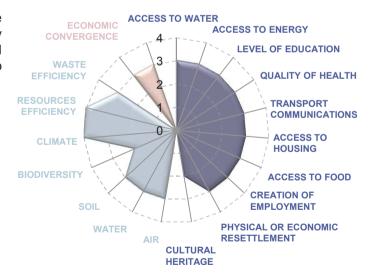
#### **Positive impacts**

**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.



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





## SERREZUELA SOLAR II FARM

#### **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

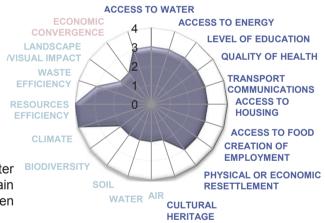
**ENVIRONMENT: Climate & Resources Efficiency -** Concentrated solar plants, while partly relying on gas as a fuel source, are considered a clean renewable source of energy. Thanks to its heat storage system (molten salts tanks), the Casablanca plant can operate for up to 7.5 hours when there is no irradiance,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

**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.



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





## ANIL 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.

**ACCES TO ENERGY ECONOMIC CONVERGENCE** LEVEL OF EDUCATION LANDSCAPE QUALITY OF HEALTH NOISE **TRANSPORT** COMMUNICATIONS **WASTE EFFICIENCY** ACCES TO HOUSING ACCES TO FOOD RESOURCE EFFICIENCY **CREATION OF EMPLOYMENT** CLIMATE PHYSICAL OR ECONOMIC **BIODIVERSITY** RESETTLEMENT WATER AIR CULTURAL HERITAGE

**ACCES TO WATER** 

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.

## IV- 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 2016
- ✓ "Capital Cost per KW (USD)" links kW to total \$cost of each project
  - This factor is coming from IEA Table<sup>(a)</sup> based on the renewable energy sector, project order date<sup>(b)</sup> and geographical zone <sup>(c)</sup>

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: <a href="http://www.worldenergyoutlook.org/weomodel/investmentcosts">http://www.worldenergyoutlook.org/weomodel/investmentcosts</a> )
b)	Project Order Date	Projects Signing Date
c)	Geographical Zone Rule	See next Appendix
d)	CO2 Emission Savings per year	Calculation using EIB's methodology



## IV- 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.



#### SOCIETE GENERALE POSITIVE IMPACT BONDS

## IV- INDICATOR GHG AVOIDED PRORATED - CALCULATION METHODOLOGY

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

∑ CO2 savings (t/a) contribution of projects

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

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



## Société Générale

December 31, 2017

Independent report of one of the statutory auditors on the compliance of assets selected for the 2015 and 2016 "Positive Impact Bonds" with the Positive Impact Assessment Framework and the Climate benefits criteria, on the impact reporting provided to investors and on the allocation of funds raised under these bonds



Ernst & Young et Autres Tour First TSA 14444 92037 Paris - La Défense cedex Tél.: +33 (0) 1 46 93 60 00 www.ev.com/fr

#### Société Générale

December 31, 2017

Independent report of one of the statutory auditors on the compliance of assets selected for the 2015 and 2016 "Positive Impact Bonds" with the Positive Impact Assessment Framework and the Climate benefits criteria, on the impact reporting provided to investors and on the allocation of funds raised under these bonds

To the Chief Executive Officer,

In our capacity as statutory auditor of the Company, we hereby present our report (i) on the compliance of the selected assets, reported by Société Générale in the use of proceeds of the "Positive Impact Bonds" and available on Société Générale's website, with the Positive Impact Assessment Framework and the Climate benefits criteria, (ii) on the impact reporting provided to investors dated December 31, 2017 and (iii) on the allocation of funds raised under these bonds.

1. Reasonable assurance report on the compliance of assets selected for the 2015 and 2016 "Positive Impact Bonds" with the Positive Impact Assessment Framework and the Climate benefits criteria and on the impact reporting provided to investors

#### Responsibility of the Company

It is the responsibility of the Company to establish the selection and monitoring criteria (hereafter the "Positive Impact Assessment Framework" and the "Climate benefits criteria") and ensure their implementation.

#### Independence and quality control

Our independence is defined by regulatory requirements and the Code of Ethics of our profession. In addition, we have implemented a quality control system, including documented policies and procedures, to ensure compliance with ethical standards, professional standards and applicable laws and regulations.

#### Responsibility of the statutory auditor

It is our role, based on our work, to express a reasonable assurance conclusion as to whether the selected assets comply, in all material aspects, with the Positive Impact Assessment Framework and the Climate benefits criteria.



We conducted the work described below in accordance with International Standard ISAE 3000 (International Standard on Assurance Engagements) and professional standards applicable in France. To assist us perform our work, we called on our experts in sustainable development, under the responsibility of Mr Eric Duvaud, partner.

#### Nature and scope of work

In order to be able to express our conclusion, we undertook the following work in April 2018:

- We assessed the suitability of the Positive Impact Assessment Framework and the Climate benefits criteria regarding their relevance, completeness, clarity, neutrality and reliability, taking into consideration the "Green Bonds Principles" dated June 2017<sup>1</sup> and the "Principles for Positive Impact Finance" dated January 2017<sup>2</sup>.
- We compared the list of assets in Société Générale's Positive Impact Bonds annual use of proceeds reporting as at December 31, 2017 with the list of assets in the last reporting (annual use of proceeds reporting as at December 31, 2017 for the bond issued in November 2015 and for the one issued in September 2016).
- For assets already verified based on the last reporting, we focused on assets categorised A and B in non-designated countries<sup>3</sup> by verifying the management of potential negative impacts according to the Positive Impact Assessment Framework.
- In case of new selected assets, we verified their positive impact and the management of their potential negative impacts (including avoidance, mitigation, remediation and/or compensation measures) according to the Positive Impact Assessment Framework.
- We verified the climate benefits of these assets in terms of CO<sub>2</sub> avoided, using the methodology developed by the European Investment Bank<sup>4</sup> and prorated CO<sub>2</sub> avoided<sup>5</sup>, using the methodology developed by Société Générale.
- We verified the total installed capacity of the assets.

### Information on Société Générale's Positive Impact approach

As mentioned by Société Générale in the Positive Impact Assessment Framework and the Positive Impact Bond description available on Société Générale's website:

 To be eligible, assets must have a positive impact on at least one of the three pillars of sustainable development (environment, social and economic development) and provide an appropriate management of the potential negative impacts.

Société Générale 2

<sup>&</sup>lt;sup>1</sup> The Green Bonds Principles and Governance Framework are available on the website of the ICMA (International Capital Market Association): www.icmagroup.org

<sup>&</sup>lt;sup>2</sup> The Principles for Positive Impact Finance are available on the website of the UNEP Finance Initiative: www.unepfi.org

<sup>&</sup>lt;sup>3</sup> The assets are categorised by Société Générale according to internal procedures, in compliance with the Equator Principles. The definition of categories and the list of designated countries can be found on the Equator Principles website: <a href="https://www.equator-principles.com">www.equator-principles.com</a>

<sup>&</sup>lt;sup>4</sup> The European Investment Bank developed methodologies for the assessment of project GHG emissions and emissions variations. The latest version (10.1) which has been used is available at: <a href="www.eib.org">www.eib.org</a>

<sup>&</sup>lt;sup>5</sup> CO<sub>2</sub> avoided/k€ invested



- Eligible assets belong to specific industries that have climate benefits (expressed as CO<sub>2</sub> emissions avoided), namely renewable energy and collective transports and infrastructure investments;
  - o Renewable Energies: Investments in the design, construction and installation of renewable energy production units (Hydro, Geothermal, Wind, Solar, Biomass or from any other renewable source of energy).
  - Collective Transports & Infrastructure (eligible category for the 2015 Positive Impact Bond only): Investments in the design, construction, development and maintenance of public collective transport and collective transport infrastructure.
- The selection of eligible assets is made by the Positive Impact Finance team according to internal procedures and is reviewed on a quarterly basis.
- Société Générale committed to replace, on a best efforts basis, loans that are repaid early or no longer eligible by other similar Positive Impact Finance assets.

#### Conclusion

In our opinion, the assets selected for the 2015 and 2016 "Positive Impact Bonds" and the impact indicators reported in the 2017 annual use of proceeds reporting, comply, in all material aspects, with the Positive Impact Assessment Framework and the Climate benefits criteria.

#### 2. Attestation on funds allocation

It is also our responsibility to express our conclusion on the funds allocated to the assets that were selected and on the consistency of the balance of the loans granted by your Company based on the use of the proceeds of the issue of the Positive Impact Bonds with the accounting records for the financial year ended December 31, 2017.

In the context of our role as *Commissaire aux comptes* (statutory auditor), we, with the co-statutory auditor, have audited the financial statements of your Company for the year ended December 31, 2017. Our audit was conducted in accordance with professional standards applicable in France, and was planned and performed for the purpose of forming an opinion on the financial statements taken as a whole and not on any individual component of the accounts used to determine the information. Accordingly, our audit tests and samples were not carried out with this objective and we do not express any opinion on any components of the accounts taken individually.

Furthermore, we have not performed any procedures to identify events that may have occurred after our report on the financial statements of Société Générale which was issued on March 8, 2018.

Société Générale 3



Our work, which constitutes neither an audit nor a review, was performed in accordance with the professional guidance issued by the French Institute of Statutory Auditors (*Compagnie nationale des commissaires aux comptes*) relating to this engagement. For the purpose of this attestation, our work consisted in verifying the consistency of the balance of the loans granted by your Company based on the use of the proceeds of the issue of the Positive Impact Bonds with the accounting records for the financial year ended December 31, 2017.On the basis of our work, we have no matters to report on the funds allocation and the consistency of the balance of the loans granted by your Company with the accounting records for the financial year ended December 31, 2017.

Paris-La Défense, April 18, 2018

One of the Statutory Auditors ERNST & YOUNG et Autres

Isabelle Santenac

Partner

Eric Duvaud

Partner, Sustainability Development

(1