Document details	
Document title	Annex D Shadow Flicker Assessment
Document subtitle	Cañadon Leon Windfarm
Project No.	0511773
Date	27 June 2019
Version	02
Author	Simone Poli
Client Name	YPF Luz

Document history

				ERM approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
Draft	01	Simone Poli	Camille Maclet	C. Maclet	05/06/2019	
Final	02	Simone Poli	Camille Maclet	C. Maclet	27/06/2019	

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1. INTRODUCTION

This document presents the shadow flicker assessment undertaken for the Cañadón León proposed 122MW (megawatt) windfarm located near Cañadón Seco settlement in the Santa Cruz Province in Argentina. The Project will comprise 29 wind turbines, each with up to 4.2 MW generating capacity and a tip height of up to 143.5 m.

Shadow flicker is "*the flickering effect caused when rotating wind turbine blades periodically cast shadows through constrained openings such as the windows of neighboring properties*".[1] Its occurrence in a specific location can be modelled and assessed[2] taking into account the relative positions of the sun throughout the year (dependent on the latitude of the site), the wind turbine layout and orientation, and the presence of sensitive receptors (e.g. inhabitants of residential buildings).

Within the present study an international recognized modelling package, WindPro, has been used to model the shadow flickering occurrence and the potential impact on the dwellings in proximity of the proposed windfarm.

In line with IFC standards and local guidelines, a worst case scenario has been modelled not considering presence of barriers, cloud cover, rotor turning off for low winds or high winds, local topography, dwelling windows orientation, and sun shining period.

Such scenario, described in the report as Scenario 0 results in a conservative (over)estimation of the shadow flicker at receptors presented in Section 5.

[1] https://www.gov.uk/government/news/wind-turbine-shadow-flicker-study-published

[2] It should be noted that modelling methods tend to be conservative and typically result in an over-estimation of the number of hours of shadow flicker likely to be experienced at the identified receptors.

2. PROJECT OVERVIEW

2.1 Project Site

The Project is located in southern Argentina in the Santa Cruz Province, approximately 25 km south west of Caleta Olivia, approximately 30 km north east from Pico Truncado.

The main nearest settlement is Cañadón Seco, located 1.2 km from the nearest wind turbine.

In terms of potential sensitive receptors, 445 potential receptors (i.e. offices, residential houses, churches, rehabilitation centers etc.) have been identified as reported in Figure 2.2. Typical single house receptor settings are reported in Figure 2.3, Figure 2.4, Figure 2.5 and Figure 2.6.

Figure 2.1 Location of the Project

Figure 2.2 Location of the potential receptors

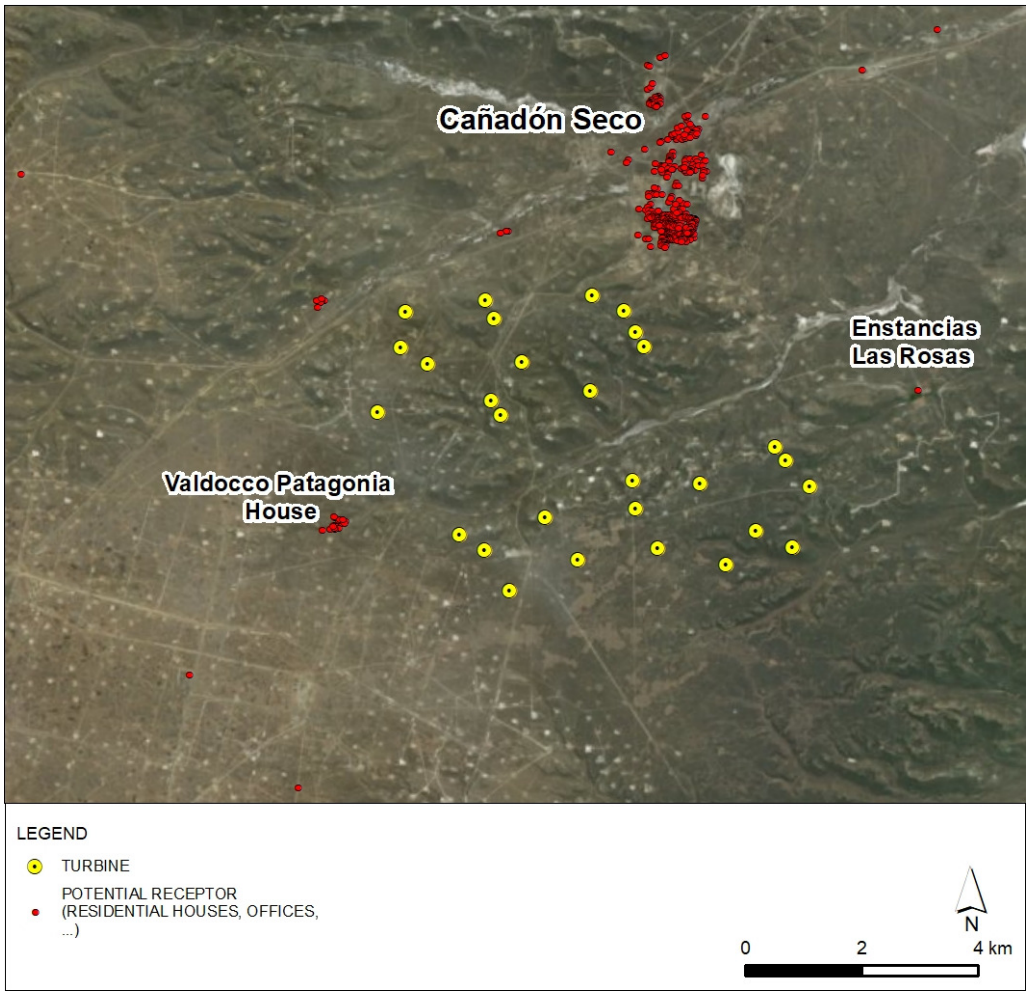


Figure 2.3 Typical residential property in Cañadon Seco Village (1)

Figure 2.4 Typical residential property in Cañadon Seco Village (2)

Figure 2.5 Kindergarten in Cañadon Seco Village

Figure 2.6 Valdocco Rehabilitation Center - Church

The project area is characterized by a typically undulating landscape, with the presence of shrublands and bare soils with limited presence of vegetation patches. A key landscape feature is represented by existing oil & gas facilities that are spread within the entire area of interest in a typical shrubland environment. As per such characteristics, it seems there are no important natural barrier other than the local topography, potentially partially screening sensitive receptors from the presence of the proposed wind turbines.

The typical vegetation cover and land use is shown in the following figure.

Figure 2.7 Shrubland in project area (valley)

Figure 2.8 Shrubland (top of plateau)

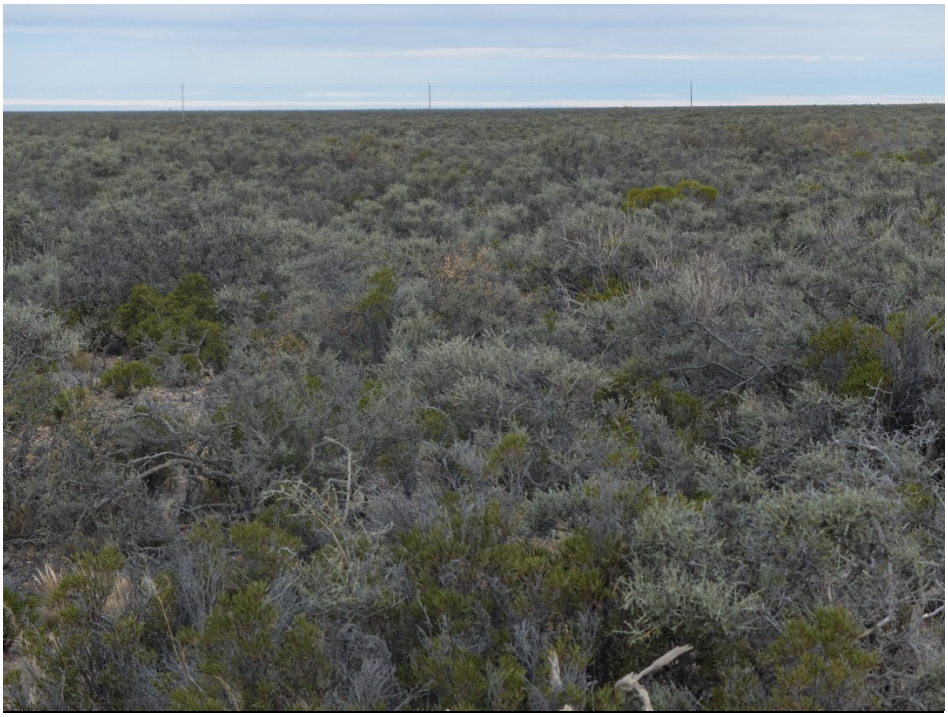


Figure 2.9 View from project area to Road 12 and Cañadon Seco industrial zone

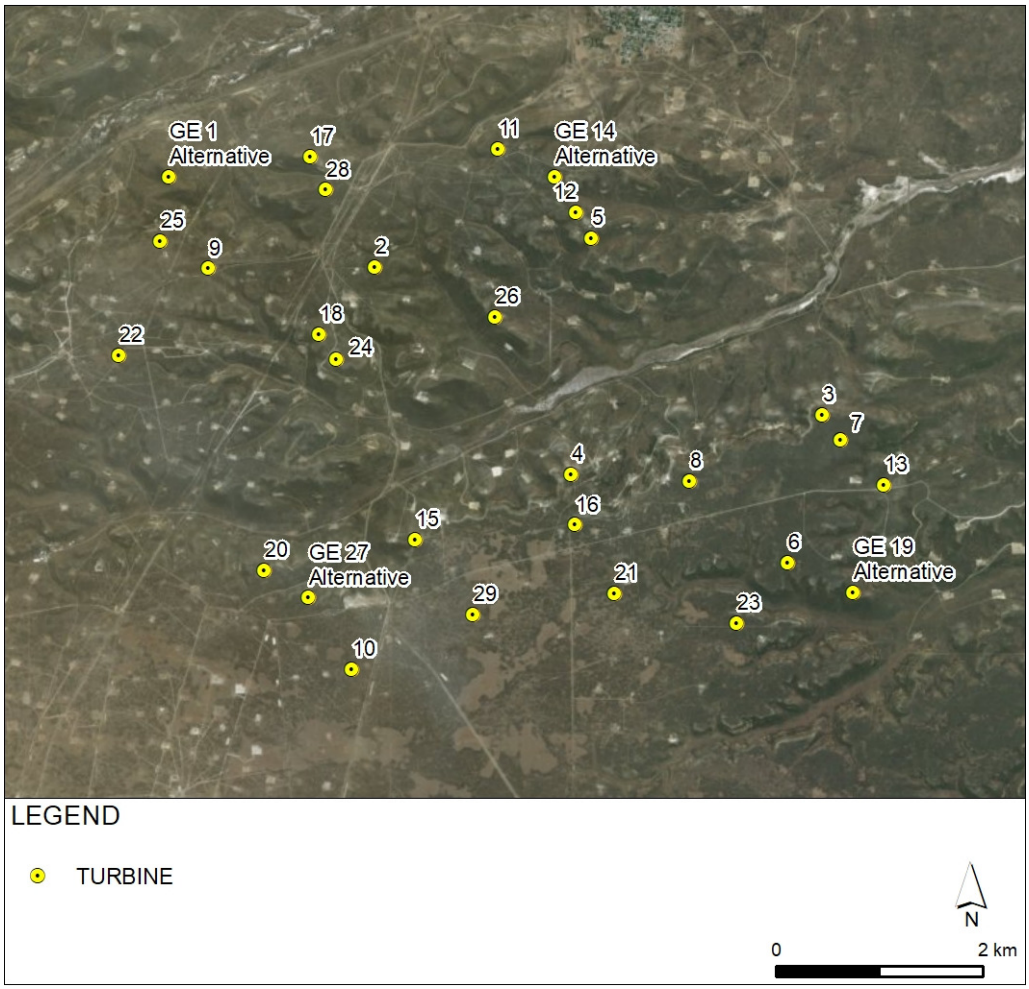
2.2 Project Components

The Cañadón Leon Project will comprise 29 wind turbines, each with a 4.2 MW generating capacity. The wind turbines are made up of three parts: a tower, a nacelle and rotary blades. Proposed turbines will have an 85m hub height, a 117 m blade diameter and a tip height of about 143.5 m.

The turbines will be sited more than 1 km away from any residential buildings. The land between the turbines will continue to be available for the current uses mainly devoted to oil & gas activities, some very limited cattle feedlot within a fenced yard at Estancia la Rosa (no pastures), and other agreed community developments.

Appendix A displays the coordinates of the proposed turbine locations and Figure 2.10 presents the layout of the windfarm.

Figure 2.10 Project layout



3. STANDARDS AND GUIDELINES

Section 3 presents applicable standards and guidelines relevant to assessing shadow flicker on wind energy projects. Worldwide the status of the legislation related to shadow flickering is not homogenous. In several countries, shadow flickering is not falling under specific regulations but frequently, the assessment of the potential impacts is driven by guidelines.

3.1 National Standards

Globally, several countries have been identified national guidelines to evaluate and assess the potential impacts related shadow flickering. As the shadow flickering is relevantly affected by the sun angle at the horizon, it is considered to be more relevant at higher latitudes, leading northern and southern countries to publish specific technical guidelines.

It should be noted that most of these countries have based their regulations on the German Guideline "*Hinweise zur Ermittlung und Beurteilung der optischen Immissionen von Windenergieanlagen (WEA-Schattenwurf-Hinweise*)" (Guideline for Identification and Evaluation of the Optical Emissions of Wind Turbines). This document states a limit value of 30 hours per year and 30 minutes per day for the astronomical maximum possible shadow (worst case), whilst real case must be limited to 8 hours per year.

Argentina has not yet adopted any standards as a guideline at the moment.

The following table is reporting the most relevant guidelines currently existing worldwide and able to inform and influence international best practices and standards.

Table 3-1 Relevant national standards

Country	Reference	Relevant Notes
England	Planning for Renewable Energy - A companion guide to PPS22 – Office of the Deputy Prime Minister 2004 Onshore Wind Energy Planning Conditions Guidance notes – Renewables Advisory Board and BERR 2007 UK Government Department for Communities and Local Government (March 2012) National Planning Policy Framework UK Government Department for Communities and Local Government (July 2013) Planning practice guidance for renewable and low carbon energy	■ Shadow flicker has been proven to occur only within a distance of 10 rotor diameters from the turbines. ■ Shadow flicker only occurs inside buildings where the flicker appears through a narrow window opening
Northern Ireland	Best Practice Guidance to Planning Policy Statement 18 'Renewable Energy' – Northern Ireland Department of the Environment 2009	■ Shadow flicker only occurs inside buildings through narrow window openings ■ The potential for shadow flicker at distances greater than 10 rotor diameters is very low

Country	Reference	Relevant Notes
		■ It is recommended shadow flicker at neighboring residential buildings and offices should not exceed 30 hours per year
Ireland	Ireland Government Department of Environment (2013) Wind energy Development Guidelines	■ Shadow flicker only occurs inside buildings through narrow window openings ■ The potential for shadow flicker at distances greater than 10 rotor diameters is very low ■ It is recommended shadow flicker at neighboring residential buildings and offices should not exceed 30 hours per year
Germany	Länderausschuss für Immissionsschutz (2002) Hinweise zur Ermittlung und Beurteilung der optischen Immissionen von Windenergieanlagen (WEA-Schattenwurf-Hinweise) (Guideline for Identification and Evaluation of the Optical Emissions of Wind Turbines)	■ Worst case scenario limited to a maximum of 30 hours per year and 30 minutes per day ■ Real case limited to 8 hours per day
Australia	Environment Protection and Heritage Council (EPHC) (2010) National Wind Farm Development Guidelines	■ Worst case: 30 hours/year ■ No daily limit ■ Real case: 10 hours/year (only required if worst case exceeds 30 hours/year)
Canada	Natural Forces Wind Inc. (June 2013) Gaetz Brook Wind Farm Shadow Flicker Assessment Report	■ Worst case: 30 hours/year and 30 min./day
USA	National Association of Regulatory Utility Commissioners (NARUC) Grants & Research Department (January 2012) Wind Energy & Windfarm Siting and Zoning Best Practices and Guidance for States	■ Worst case: 30 hours/year and 30 min./day
Denmark	Danish Government - Miljøministeriet Naturstyrelsen (2015) Vejledning om planlægning for og tilladelse til opstilling af vindmøller, 19-20	■ Real case: 10 hours/year
Netherlan ds	Nederlandse overheid - Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (2017) Regeling algemene regels voor inrichtingen milieubeheer, Art. 3.12	■ Wind turbine shall be equipped with automatic shadow flicker control system which stalls the turbine if shadow flicker occurs at sensitive receptors and the distance between the turbine and the sensitive receptor is less than 12 times the rotor diameter and if on average shadow

Country	Reference	Relevant Notes
		flicker occurs more than 17 days per year for more than 20 minutes per day. ■ Receptors like office buildings are not mapped as sensitive receptors

3.2 International Standards

In August 2015, the World Bank Group published the Environmental, Health and Safety (EHS) Guidelines for Wind Energy. These are technical reference documents containing examples of good industry practice.

The definition adopted in the EHS guidelines states that shadow flicker occurs when the sun passes behind the wind turbine and casts a shadow. As the rotor blades rotate, shadows pass over the same point causing an effect termed shadow flicker. Shadow flicker may become a problem when potentially sensitive receptors (e.g., residential properties, workplaces, learning and/or health care spaces/facilities) are located nearby, or have a specific orientation to the wind energy facility.

Key points identified in the guidelines include:

- Potential shadow flicker issues are more likely at higher latitudes where the sun is lower in the sky and therefore are longer shadows that will extend the radius within which potentially significant shadow flicker impact will be experienced.
- If it is not possible to locate the wind turbines where neighboring receptors experience no shadow flicker effects, it is recommended that the predicted duration of shadow flicker effects experienced at a sensitive receptor should not exceed 30 hours per year and 30 minutes per day on the worst affected days, based on a worst-case scenario.
- Recommended prevention and control measures to avoid significant shadow flicker impacts include siting wind turbines appropriately to avoid shadow flicker being experienced or to meet limits placed on the duration of shadow flicker occurrence, as set out in the paragraph above, or programming turbines to shut down at times when shadow flicker limits are exceeded.

4. SHADOW FLICKER ASSESSMENT

The likelihood and duration of the flicker effect depends upon a number of factors, including:

- Direction of the property relative to the turbine;
- Turbine height and rotor diameter;
- Time of the day and year;
- Distance from the turbine (the further the observer is from the turbine, the less pronounced the effect will be);
- Wind direction (that affect potential wind turbine orientation); and
- Weather conditions (presence of cloud cover, fog, humidity reduces the occurrence of shadow flicker as the visibility itself of the turbine is reduced).

In general, shadow flicker occurs during clear sky conditions, when the sun is low on the horizon. As the sun angle on the horizon changes throughout the year, the locations experiencing the phenomenon changes, so specific shadow receptors can be affected in different periods.

The theoretical number of hours of shadow flicker experienced annually at a given location can be calculated using modelling packages incorporating the sun path, topographic variation over the wind farm site, and wind turbine details such as rotor diameter and hub height.

When assessing shadow flicker impacts, the worst case and/or real case impacts are determined:

- ***Worst Case Scenario***: the astronomical maximum possible shadow flicker duration is defined as the shadow flicker duration which occurs when the sun is always shining during daylight hours (i.e. the sky is always clear), the wind turbine is always rotating and the rotor plane is always perpendicular to the line from the WTG to the sun;
- ***Real Case Scenario***: the expected shadow flicker duration is the shadow flicker duration when taking into account average sunshine hour probabilities and wind statistics of the particular region.

The following section briefly describes the modelling package used, as well as the input criteria for assessing the shadow flicker throughout the selected scenario identified in the introduction.

4.1 WindPro Model: Scenarios and Input Criteria

This assessment has been undertaken using WindPro 3.1©; a computer package widely used in the wind industry. The software package includes a Shadow Flicker Module (SHADOW) that calculates how often and the intervals in which a specific neighbor or area will be affected by one or more wind turbines. Calculations are provided in Appendix B.

As reported in the introduction, Worst Case Scenario have been modelled (WC).

Within WC Scenario, the calculations are based on a worst case scenario with no parameters characterizing the local settings and conditions as well as project specific characteristics:

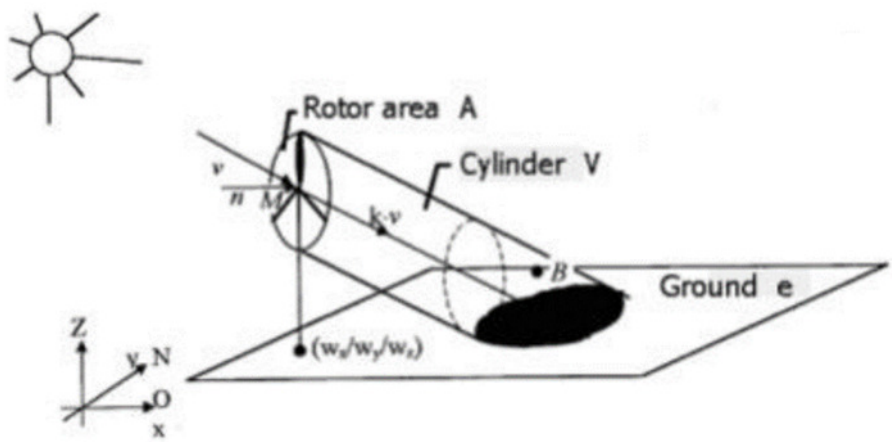
- The presence of physical barriers is not considered;
- Natural vegetation screening not included;
- Cloud cover, humidity is not included;
- The sun is shining all the day, from sunrise to sunset;
- Rotor is not turning off for low winds or high winds,

- Shadow receptors are modelled using the greenhouse mode, meaning that each receptor will face all directions (visibility 360 degrees).

WC Scenario 0 has been carried out with a temporal resolution of 1 minute (if shadow flicker is predicted to occur in any 1-minute period, the model records this as 1 minute of shadow flicker).

The model calculates outputs according to the principles presented in the following Figure 4.1.

Figure 4.1 Shadow flickering calculation basics



All potential receptors on site have been modelled taking into consideration the following:

- Single story tall, and so shadow flicker has been calculated at a height of 1 m (equivalent to the ground floor windows);
- Slope of the window has been set to 90°;
- The identified receptors are simulated as fixed points with the possibility to view 360°C, representing an unrealistic scenario, as real windows would be facing only a particular direction.

With regards to the expected wind direction, based on the wind frequency data, the following operational time have been used.

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
560	788	332	130	130	227	446	648	1,454	2,601	1,059	385	8,760

4.1.1 Summary of Scenario Settings

The following table is reporting the modelling settings adopted for WC Scenario 0.

Table 4-1 WindPro Shadow Module inputs

Inputs	WC-Scenario 0
Wind Turbine location	See Figure 2.10 and Appendix A
Rotor diameter and hub height	117m / 85m
Wind Turbine Operation	**Rotors are always turning based on the identified operational time per wind sector**
Wind Turbine Visibility	A WTG will be visible if it is visible from any part of the receiver window (greenhouse mode)
Window stories dimensions	1 m height / 1 m large / 1 m from the ground floor
Cloud Cover	Not considered
Physical Barriers (i.e. vegetation)	Not considered
Presence of existing turbines	No other Wind Turbines are present nearby the proposed project
Minimum sun height over horizon for influence	3°
Day step for calculation	1 day
Time step for calculation	1 minute
Shining period	**The sun is always shining all day, from sunrise to sunset (12 hours per day)**
Height contour	SRTM Digital Elevation Model
Eye Height	2 m

4.2 Potential Impacts related to Shadow Flicker

The association between shadow flicker caused by wind turbines and the effects on human health is highly debated.

Some studies suggest that flicker from turbines pose a potential risk of inducing photosensitive seizures (*Harding et al, 2008; Smedley et al., 2010*).

However, in 2011, the UK Department of Energy and Climate Change concluded in their Update Shadow Flicker Evidence Base report that "*On health effects and nuisance of the shadow flicker effect, it is considered that the frequency of the flickering caused by the wind turbine rotation is such that it should not cause a significant risk to health".*

Despite such conclusions, other reports state that although shadow flicker from wind turbines is unlikely to lead to a risk of photo-induced epilepsy, the potential for annoyance and disturbance are still present leading to stress (Cope et al., 2009; Minnesota Department of Health, 2009; National Research Council, 2007).

In any case, mitigation options are available to reduce potential impacts, including:

- Careful site design;
- Locating wind turbines at least 500m from sensitive receptors;
- Terminating turbines which are known to cause problematic flicker during specific periods and weather conditions;
- Planting vegetation or tree lines to “cut” the line of sight to turbines that are causing flicker; and
- The installation of window blinds or awnings to avoid the flicker phenomenon inside buildings.

5. MODEL RESULTS

As presented above, Worst Case Scenario has been modelled using Shadow Flickering WindPro Module in order to identify the receptors potentially affected by the flickering. The project area is characterized by the presence of about 445 dwellings/group of dwellings. Calculations are presented in Appendix B.

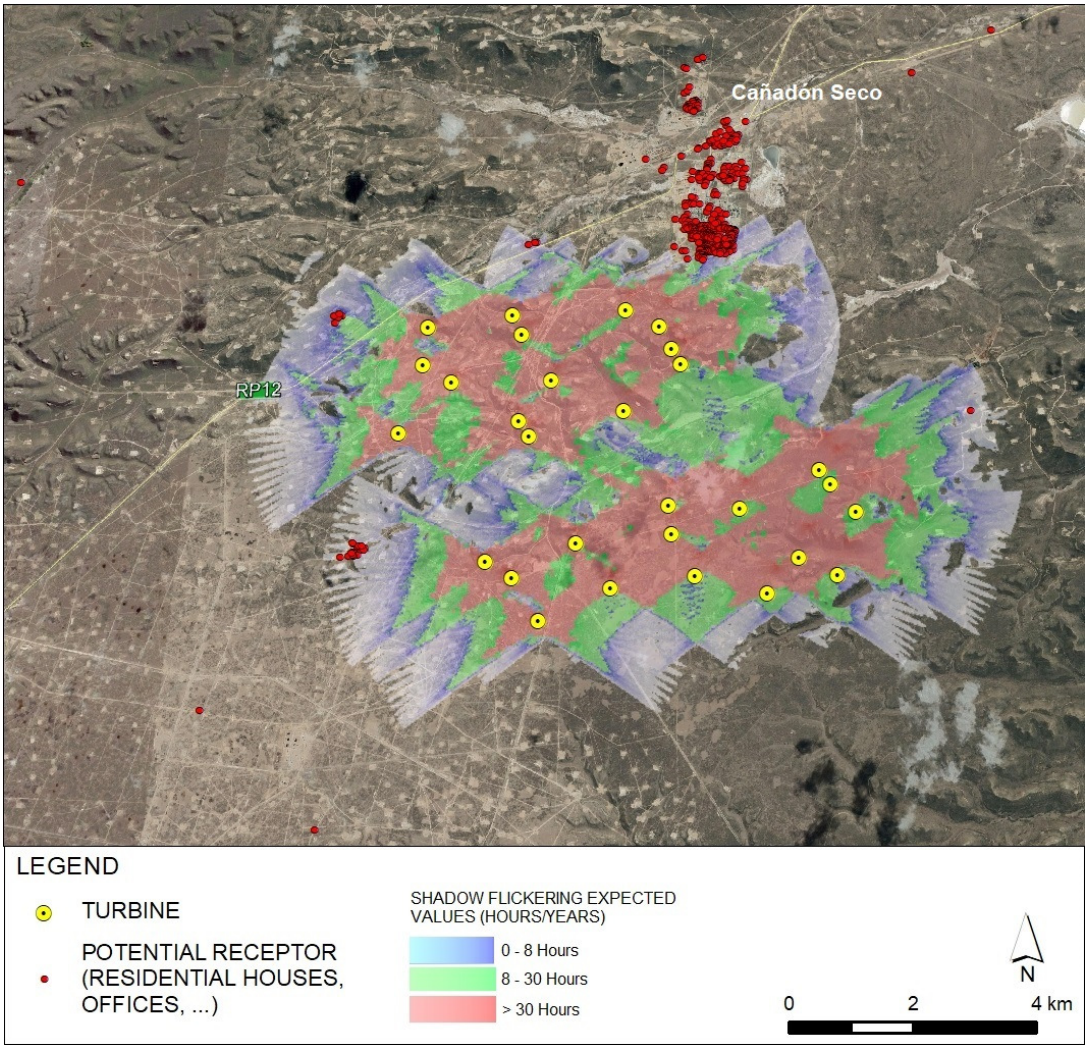
5.1.1 WC-Scenario 0 – Results

As reported above, the modelling package is calculating the predicted shadow flickering durations at receptors.

The model has considered a worst6case scenario with highly conservative assumptions, leading no receptors being adversely impacted by Shadow Flicker, except for a very limited number of hours (less than 8 hours per year). In reality, it is likely that actual impacts will be even more limited.

Figure 5.1 presents the distribution of areas where flickering is calculated according to the Worst Case Scenario detailed in the previous section.

Figure 5.1 Map of expected shadow flicker (hours/year)



6. CONCLUSION AND RECOMMENDATIONS

The shadow flickering assessment has taken into consideration one scenario: a worst case scenario.

No receptors are calculated to be potentially impacted by shadow flickering above international guidance levels.

Regarding flickering effects under real conditions, in the exceptional event that on-site residents will be potentially affected by shadow-flickering once the turbines are operational, it is suggested the Project Proponent will assess the situation on a case-by-case basis and work according to the following mitigation scheme:

- **Monitoring & Grievance Reporting** – implement a process to assess the real occurrence of the shadow flickering locally at residential dwellings in order to exclude the phenomena mainly due to local settings. In case of dwellings experiencing shadow flickering, a grievance mechanism and further investigation are suggested to properly manage the complains;
- **Visual Screening (Natural) –** Assess potential sensitive receptors, for which shadow flicker modelling indicates could exceed 8 hours per year, in order to ascertain the extent of existing natural visual screening in place. If not existing, the occurrence of shadow flickering during operation could be furtherly investigated, and if confirmed, natural screening could be realized to minimize the effect.
- **Visual Screening (Architectural / Structural)** - If grievances will be received or if natural visual screening at potential sensitive receptors are found to be insufficient, investigations to implement architectural / structural screening such as the installation of blinds, window shades, window tinting, awnings or fences at affected receptors could be evaluated to further minimize the effect of shadow flicker.

7. REFERENCES

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Boverket (2009) Vindkraftshandboken Planering och prövning av vindkraftverk på land och i kustnära vattenområden

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Weatheronline.com for cloud coverage trend [accessed 02 October 2017]

APPENDIX A. WIND TURBINE COORDINATES

5st June 2019

Number		
GE 1 Alternative	601956.0000	4840948.0001
2	603944.7400	4840076.1901
3	608283.6511	4838634.6000
4	605846.2421	4838059.8910
5	606045.9250	4840350.1340
6	607950.0000	4837200.0000
7	608461.0644	4838399.1320
8	606996.6700	4837997.9500
9	602336.2867	4840058.7980
10	603728.1284	4836169.0300
11	605142.0278	4841221.1690
12	605894.3414	4840601.2610
13	608877.6775	4837953.8650
GE 14 Alternative	605688.0000	4840951.0001
15	604342.5959	4837426.1870
16	605886.2057	4837571.3210
17	603324.9137	4841147.2740
18	603410.7341	4839424.3770
GE 19 Alternative	608577.0000	4836910.0000
20	602873.9193	4837124.7580
21	606270.6663	4836904.6690
22	601464.6461	4839219.0290
23	607447.8704	4836614.6730
24	603574.8577	4839177.3320
25	601870.6610	4840326.7180
26	605110.3200	4839586.7899
GE 27 Alternative	603304.0000	4836862.0001
28	603470.9411	4840823.7350
29	604900.0000	4836700.0000

APPENDIX B. SHADOW FLICKER CALCULATIONS

Project:
YPF_Argentina

Description:
Shadow Flickering Assessment of 29 Turbines nearby Canadon Seco in the south of Argentina.
Scenario Real Case by Statistics - YPF Argentina Canadon Seco

Licensed user:
ERM ITALIA S.P.A.
Via San Gregorio, 38
IT-20124 Milano
+39 02 6744 0217
Gianluca Scandamarro / gianluca.scandamarro@erm.com
Calculated:
05/06/2019 17:10/3.2.743

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

Assumptions for shadow calculations

Maximum distance for influence
Calculate only when more than 20 % of sun is covered by the blade
Please look in WTG table

Minimum sun height over horizon for influence	3	°
Day step for calculation	1	days
Time step for calculation	1	minutes

Sunshine probability S (Average daily sunshine hours) []

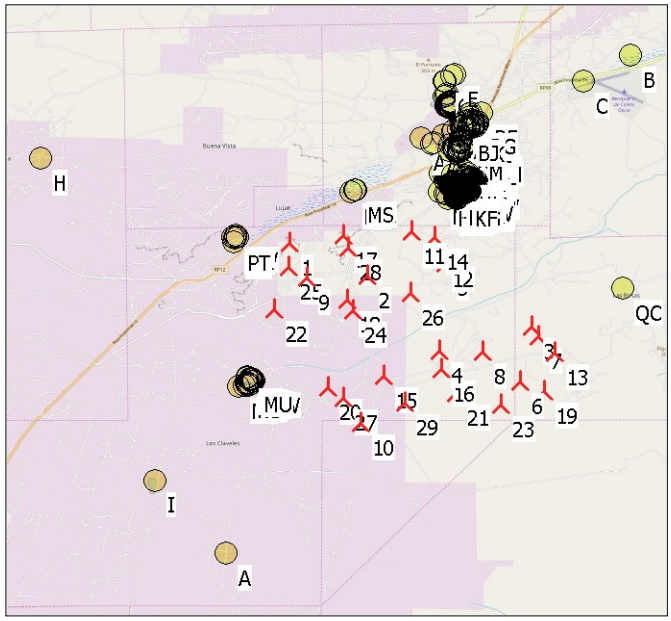
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
560	788	332	130	130	227	446	648	1,454	2,601	1,059	385	8,760

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values.
A WTG will be visible if it is visible from any part of the receiver window.
The ZVI calculation is based on the following assumptions:
Height contours used: Project Wizard Elevation Data Grid (SRTM: Shuttle DTM
Obstacles used in calculation
Eye height for map: 1.5 m
Grid resolution: 1.0 m

All coordinates are in
UTM (south)-WGS84 Zone: 19



Scale 1:200,000
New WTG Shadow receptor

WTGs

	Easting	Southing	Z [m]	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data Calculation distance [m]	RPM [RPM]
1	601,902	4,840,982	301.5	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
2	603,945	4,840,076	309.4	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
3	608,284	4,838,635	304.0	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
4	605,846	4,838,060	305.7	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
5	606,046	4,840,350	306.2	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
6	607,950	4,837,200	306.3	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
7	608,461	4,838,399	306.0	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
8	606,997	4,837,998	305.0	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
9	602,336	4,840,059	310.0	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
10	603,728	4,836,169	310.9	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
11	605,142	4,841,221	311.6	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
12	605,894	4,840,601	308.9	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
13	608,878	4,837,954	304.3	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
14	605,765	4,841,047	309.1	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
15	604,343	4,837,426	309.0	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
16	605,886	4,837,571	308.0	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
17	603,325	4,841,147	306.3	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
18	603,411	4,839,424	309.8	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
19	608,591	4,836,921	300.7	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
20	602,874	4,837,125	310.8	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
21	606,271	4,836,905	307.2	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
22	601,465	4,839,219	310.5	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
23	607,448	4,836,615	305.6	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
24	603,575	4,839,177	306.7	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
25	601,871	4,840,327	312.3	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
26	605,110	4,839,587	300.0	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
27	603,272	4,836,866	310.8	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
28	603,471	4,840,824	313.1	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0
29	604,900	4,836,700	307.0	GE WIND ENERGY 4.2-117 ...	No	GE WIND ENERGY	4.2-117-4,230	4,230	117.0	85.0	2,500	0.0

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

Shadow receptor-Input

No.	Name	Easting	Southing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
A		600,093	4,832,811	310.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
B		611,063	4,845,777	80.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
C		609,770	4,845,080	93.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
D		606,312	4,845,298	167.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
E		606,380	4,845,336	157.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
F		606,087	4,845,162	174.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
G		606,129	4,845,156	172.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
H		595,355	4,843,303	317.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
I		598,240	4,834,735	308.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
J		606,084	4,844,756	155.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
K		606,142	4,844,785	156.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
L		606,173	4,844,845	155.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
M		606,272	4,844,633	149.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
N		606,244	4,844,625	148.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
O		606,219	4,844,613	147.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
P		606,161	4,844,571	147.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
Q		606,146	4,844,544	146.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
R		606,129	4,844,528	146.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
S		606,122	4,844,502	144.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
T		606,301	4,844,598	146.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
U		606,270	4,844,593	147.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
V		606,246	4,844,580	146.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
W		606,189	4,844,533	145.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
X		606,173	4,844,511	144.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
Y		606,161	4,844,486	143.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
Z		606,201	4,844,470	142.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AA		606,213	4,844,501	143.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AB		606,275	4,844,547	144.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AC		606,307	4,844,551	143.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AD		606,297	4,844,510	141.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AE		606,259	4,844,474	141.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AF		606,237	4,844,473	141.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AG		606,244	4,844,453	140.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AH		605,766	4,843,544	136.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AI		605,730	4,843,504	136.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AJ		605,460	4,843,673	147.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AK		606,326	4,843,869	130.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AL		606,310	4,843,851	129.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AM		606,439	4,843,895	128.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AN		606,577	4,843,887	128.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AO		606,526	4,843,938	129.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AP		606,550	4,843,953	129.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AQ		606,572	4,843,963	128.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AR		606,505	4,843,969	128.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AS		606,527	4,843,976	128.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AT		606,553	4,843,993	128.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AU		606,620	4,844,026	127.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AV		606,595	4,844,087	127.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AW		606,667	4,844,133	125.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AX		606,758	4,844,220	126.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AY		606,745	4,844,277	129.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
AZ		606,734	4,844,287	130.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BA		606,783	4,844,309	128.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BB		606,759	4,844,052	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BC		606,869	4,844,100	125.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BD		606,825	4,844,119	124.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BE		606,817	4,844,152	123.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BF		607,072	4,844,287	120.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BG		606,966	4,844,080	124.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BH		606,955	4,844,043	123.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BI		606,916	4,844,054	124.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BJ		606,635	4,843,920	126.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BK		606,690	4,843,889	126.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BL		606,728	4,843,916	125.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BM		606,721	4,843,946	126.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BN		606,712	4,843,970	126.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BO		606,863	4,844,005	124.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BP		606,856	4,843,996	124.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BQ		606,829	4,843,958	125.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BR		606,816	4,843,927	125.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Easting	Southing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
BS		606,909	4,843,959	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BT		606,938	4,844,001	123.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BU		606,046	4,843,736	133.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BV		606,513	4,843,678	127.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BW		606,519	4,843,606	128.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BX		606,476	4,843,607	128.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BY		606,461	4,843,576	128.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
BZ		606,471	4,843,556	129.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CA		606,448	4,843,534	130.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CB		606,447	4,843,515	131.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CC		606,226	4,843,477	131.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CD		606,201	4,843,342	133.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CE		606,327	4,843,445	131.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CF		606,335	4,843,432	131.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CG		606,335	4,843,422	131.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CH		606,383	4,843,445	129.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CI		606,339	4,843,336	132.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CJ		606,317	4,843,383	132.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CK		606,465	4,843,431	130.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CL		606,437	4,843,403	130.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CM		606,558	4,843,428	128.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CN		606,523	4,843,388	129.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CO		606,433	4,843,337	129.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CP		606,430	4,843,315	129.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CQ		606,428	4,843,297	129.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CR		606,427	4,843,245	130.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CS		606,751	4,843,563	125.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CT		606,725	4,843,506	125.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CU		606,733	4,843,536	125.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CV		606,809	4,843,563	125.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CW		606,725	4,843,465	125.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CX		606,879	4,843,526	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CY		606,916	4,843,558	125.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
CZ		606,932	4,843,508	125.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DA		606,862	4,843,469	125.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DB		606,923	4,843,428	127.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DC		606,958	4,843,456	126.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DD		607,020	4,843,634	122.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DE		607,043	4,843,515	123.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DF		607,027	4,843,451	125.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DG		607,084	4,843,524	122.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DH		607,103	4,843,358	123.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DI		607,051	4,843,365	124.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DJ		607,054	4,843,342	124.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DK		607,026	4,843,243	123.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DL		607,031	4,843,284	124.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DM		606,903	4,843,373	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DN		606,831	4,843,395	125.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DO		606,749	4,843,336	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DP		606,749	4,843,381	125.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DQ		606,746	4,843,365	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DR		606,730	4,843,371	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DS		606,711	4,843,361	126.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DT		606,659	4,843,392	126.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DU		606,704	4,843,417	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DV		606,718	4,843,418	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DW		606,823	4,843,364	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DX		606,824	4,843,350	126.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DY		606,822	4,843,339	125.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
DZ		606,821	4,843,327	125.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EA		606,505	4,843,384	130.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EB		606,247	4,843,054	133.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EC		606,201	4,843,070	133.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ED		606,110	4,842,970	134.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EE		606,151	4,842,965	134.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EF		606,190	4,842,953	133.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EG		606,233	4,842,960	133.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EH		606,108	4,842,922	136.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EI		606,335	4,842,955	131.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EJ		606,134	4,842,795	138.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Easting	Southing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
EK		605,934	4,842,711	148.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EL		606,054	4,842,697	143.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EM		606,092	4,842,736	142.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EN		606,104	4,842,695	143.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EO		606,163	4,842,675	143.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EP		606,109	4,842,625	146.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EQ		606,081	4,842,547	151.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ER		606,165	4,842,597	146.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ES		606,126	4,842,573	148.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ET		606,172	4,842,561	146.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EU		606,177	4,842,524	146.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EV		606,185	4,842,542	146.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EW		606,144	4,842,559	147.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EX		606,205	4,842,632	143.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EY		606,206	4,842,620	144.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
EZ		606,212	4,842,592	144.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FA		606,230	4,842,594	144.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FB		606,255	4,842,624	143.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FC		606,258	4,842,583	144.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FD		606,292	4,842,602	143.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FE		606,305	4,842,627	142.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FF		606,321	4,842,579	144.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FG		606,322	4,842,591	143.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FH		606,355	4,842,614	142.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FI		606,362	4,842,588	143.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FJ		606,391	4,842,611	142.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FK		606,440	4,842,611	143.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FL		606,429	4,842,563	146.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FM		606,477	4,842,604	145.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FN		606,497	4,842,563	146.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FO		606,467	4,842,557	146.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FP		606,405	4,842,564	146.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FQ		606,511	4,842,602	144.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FR		606,534	4,842,600	143.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FS		606,222	4,842,559	145.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FT		606,249	4,842,555	145.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FU		606,270	4,842,555	145.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FV		606,311	4,842,550	144.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FW		606,341	4,842,543	146.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FX		606,239	4,842,508	147.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FY		606,264	4,842,505	147.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
FZ		606,330	4,842,518	147.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GA		606,332	4,842,498	147.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GB		606,342	4,842,498	147.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GC		606,370	4,842,536	146.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GD		606,381	4,842,491	148.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GE		606,415	4,842,532	148.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GF		606,402	4,842,486	149.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GG		606,455	4,842,524	147.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GH		606,497	4,842,522	148.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GI		606,468	4,842,495	150.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GJ		606,453	4,842,497	149.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GK		606,459	4,842,482	150.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GL		606,486	4,842,497	149.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GM		606,564	4,842,473	148.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GN		606,517	4,842,479	149.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GO		606,548	4,842,477	148.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GP		606,617	4,842,476	146.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GQ		606,662	4,842,498	146.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GR		606,585	4,842,579	144.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GS		606,575	4,842,556	145.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GT		606,575	4,842,594	142.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GU		606,539	4,842,711	140.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GV		606,463	4,842,849	135.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GW		606,460	4,842,825	136.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GX		606,500	4,842,925	131.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GY		606,483	4,842,889	133.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
GZ		606,590	4,843,156	130.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HA		606,576	4,843,103	128.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HB		606,615	4,843,096	128.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

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SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

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No.	Name	Easting	Southing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
HC		606,644	4,842,812	135.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HD		606,686	4,842,805	135.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HE		606,764	4,842,793	132.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HF		606,626	4,842,849	134.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HG		606,646	4,842,703	139.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HH		606,683	4,842,700	139.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HI		606,648	4,842,624	142.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HJ		606,745	4,842,630	141.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HK		606,684	4,842,570	146.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HL		606,636	4,842,583	146.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HM		606,645	4,842,558	147.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HN		606,671	4,842,556	147.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HO		606,728	4,842,566	143.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HP		606,742	4,842,546	144.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HQ		606,752	4,842,568	143.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HR		606,776	4,842,564	143.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HS		606,802	4,842,561	143.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HT		606,757	4,842,297	151.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HU		606,731	4,842,299	151.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HV		606,712	4,842,302	151.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HW		606,690	4,842,301	151.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HX		606,662	4,842,351	149.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HY		606,646	4,842,354	149.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
HZ		606,632	4,842,360	150.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IA		606,620	4,842,312	152.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IB		606,605	4,842,358	152.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IC		606,603	4,842,315	152.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ID		606,638	4,842,312	151.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IE		606,587	4,842,364	153.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IF		606,585	4,842,318	153.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IG		606,570	4,842,366	153.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IH		606,549	4,842,368	153.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
II		606,563	4,842,320	154.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IJ		606,544	4,842,325	155.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IK		606,531	4,842,372	154.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IL		606,528	4,842,325	156.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IM		606,513	4,842,366	155.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IN		606,509	4,842,328	156.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IO		606,490	4,842,369	154.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IP		606,491	4,842,332	156.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IQ		606,470	4,842,338	155.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IR		606,478	4,842,349	155.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IS		606,455	4,842,370	154.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IT		606,414	4,842,348	154.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IU		606,427	4,842,373	153.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IV		606,392	4,842,389	153.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IW		606,400	4,842,348	154.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IX		606,365	4,842,391	153.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IY		606,365	4,842,374	153.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
IZ		606,372	4,842,349	154.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JA		606,356	4,842,361	154.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JB		606,333	4,842,394	153.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JC		606,327	4,842,383	153.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JD		606,265	4,842,401	151.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JE		606,262	4,842,390	151.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JF		606,226	4,842,407	151.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JG		606,202	4,842,387	152.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JH		606,355	4,842,311	156.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JI		606,375	4,842,310	156.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JJ		606,393	4,842,304	155.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JK		606,413	4,842,299	156.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JL		606,431	4,842,299	156.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JM		606,350	4,842,276	157.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JN		606,369	4,842,272	157.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JO		606,390	4,842,271	156.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JP		606,406	4,842,270	157.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JQ		606,425	4,842,266	157.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JR		606,471	4,842,298	156.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JS		606,499	4,842,294	157.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JT		606,539	4,842,287	157.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Easting	Southing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
JU		606,465	4,842,261	158.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JV		606,347	4,842,236	157.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JW		606,364	4,842,234	158.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JX		606,382	4,842,234	158.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JY		606,400	4,842,233	158.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
JZ		606,419	4,842,230	158.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KA		606,452	4,842,223	159.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KB		606,472	4,842,219	160.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KC		606,493	4,842,220	159.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KD		606,509	4,842,216	159.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KE		606,533	4,842,211	159.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KF		606,507	4,842,177	160.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KG		606,526	4,842,175	160.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KH		606,467	4,842,185	162.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KI		606,449	4,842,190	162.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KJ		606,413	4,842,192	162.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KK		606,394	4,842,198	160.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KL		606,378	4,842,200	160.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KM		606,353	4,842,204	158.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KN		606,337	4,842,208	158.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KO		606,332	4,842,167	159.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KP		606,351	4,842,162	160.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KQ		606,371	4,842,163	161.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KR		606,390	4,842,160	162.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KS		606,406	4,842,155	163.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KT		606,403	4,842,122	164.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KU		606,382	4,842,124	163.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KV		606,345	4,842,131	162.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KW		606,326	4,842,134	162.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KX		606,363	4,842,129	163.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KY		606,318	4,842,088	165.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
KZ		606,349	4,842,090	165.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LA		606,385	4,842,089	164.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LB		606,400	4,842,085	165.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LC		606,384	4,842,054	166.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LD		606,578	4,842,282	155.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LE		606,574	4,842,265	156.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LF		606,569	4,842,242	156.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LG		606,596	4,842,288	154.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LH		606,595	4,842,265	156.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LI		606,587	4,842,236	156.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LJ		606,612	4,842,282	154.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LK		606,631	4,842,280	154.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LL		606,649	4,842,276	153.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LM		606,641	4,842,202	157.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LN		606,635	4,842,183	159.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LO		606,608	4,842,158	162.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LP		606,682	4,842,230	156.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LQ		606,694	4,842,254	155.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LR		606,713	4,842,262	154.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LS		606,731	4,842,258	153.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LT		606,779	4,842,254	152.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LU		606,882	4,842,206	157.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LV		606,810	4,842,210	155.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LW		606,796	4,842,207	155.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LX		606,718	4,842,221	155.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LY		606,731	4,842,238	154.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
LZ		606,746	4,842,224	153.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MA		606,762	4,842,219	152.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MB		606,773	4,842,213	153.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MC		606,788	4,842,212	154.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MD		606,790	4,842,183	157.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ME		606,781	4,842,188	156.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MF		606,773	4,842,188	156.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MG		606,810	4,842,171	159.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MH		606,755	4,842,177	157.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MI		606,752	4,842,144	161.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MJ		606,717	4,842,193	156.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MK		606,698	4,842,195	157.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ML		606,674	4,842,176	158.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0

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SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Easting	Southing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
MM		606,673	4,842,150	160.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MN		606,057	4,842,197	165.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MO		606,132	4,842,070	167.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MP		606,109	4,842,203	163.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MQ		605,918	4,842,257	169.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MR		603,701	4,842,333	176.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MS		603,667	4,842,328	176.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MT		603,572	4,842,287	177.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MU		600,821	4,837,374	287.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MV		600,855	4,837,378	286.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MW		600,913	4,837,354	281.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MX		600,848	4,837,321	281.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MY		600,796	4,837,370	288.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
MZ		600,733	4,837,434	295.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NA		600,889	4,837,333	281.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NB		600,648	4,837,227	282.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NC		600,719	4,837,302	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ND		600,743	4,837,272	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NE		600,789	4,837,245	287.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NF		600,734	4,837,225	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NG		600,717	4,837,242	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NH		600,511	4,837,207	288.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NI		600,700	4,837,281	286.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NJ		600,813	4,837,393	292.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NK		600,853	4,837,396	291.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NL		600,719	4,837,449	295.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NM		606,825	4,842,558	142.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NN		606,848	4,842,546	142.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NO		606,899	4,842,550	139.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NP		606,908	4,842,523	139.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NQ		606,912	4,842,509	139.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NR		606,890	4,842,478	141.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NS		606,896	4,842,448	142.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NT		606,879	4,842,423	145.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NU		606,817	4,842,484	142.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NV		606,819	4,842,446	144.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NW		606,849	4,842,483	142.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NX		606,845	4,842,462	143.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NY		606,877	4,842,382	146.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
NZ		606,872	4,842,359	147.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OA		606,844	4,842,396	146.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OB		606,824	4,842,387	146.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OC		606,830	4,842,405	146.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OD		606,799	4,842,391	146.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OE		606,744	4,842,387	147.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OF		606,225	4,842,477	147.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OG		606,208	4,842,446	149.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OH		606,219	4,842,439	150.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OI		606,254	4,842,473	148.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OJ		606,237	4,842,441	150.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OK		606,286	4,842,476	149.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OL		606,274	4,842,433	151.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OM		606,315	4,842,467	149.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
ON		606,342	4,842,464	149.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OO		606,311	4,842,425	152.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OP		606,329	4,842,420	152.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OQ		606,380	4,842,459	150.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OR		606,295	4,842,429	151.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OS		606,404	4,842,461	150.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OT		606,428	4,842,458	150.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OU		606,419	4,842,419	152.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OV		606,453	4,842,443	151.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OW		606,434	4,842,414	152.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OX		606,452	4,842,406	152.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OY		606,487	4,842,441	151.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
OZ		606,466	4,842,402	152.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PA		606,520	4,842,441	151.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PB		606,536	4,842,437	151.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PC		606,525	4,842,397	152.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PD		606,557	4,842,434	151.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Easting	Southing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
				[m]	[m]	[m]	[m]	[°]		[m]
PE		606,592	4,842,428	152.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PF		606,616	4,842,430	150.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PG		606,638	4,842,425	149.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PH		606,619	4,842,385	152.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PI		606,815	4,842,360	148.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PJ		606,865	4,842,308	151.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PK		606,858	4,842,282	154.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PL		606,880	4,842,280	152.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PM		606,827	4,842,305	154.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PN		606,814	4,842,287	154.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PO		606,799	4,842,297	153.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PP	Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (432)	606,786	4,842,287	152.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PQ		606,771	4,842,293	151.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PR		600,544	4,841,141	213.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PS		600,505	4,841,129	213.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PT		600,476	4,841,111	213.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PU		600,428	4,841,030	213.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PV		600,413	4,841,134	221.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PW		600,499	4,841,177	219.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PX		606,610	4,842,661	140.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PY		606,564	4,842,789	136.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
PZ		606,591	4,842,636	141.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
QA		606,321	4,842,325	155.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
QB		606,274	4,842,679	142.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
QC		610,723	4,839,608	182.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0

Calculation Results

Shadow receptor

No.	Name	Shadow, expected values Shadow hours per year [h/year]
A		0:00
B		0:00
C		0:00
D		0:00
E		0:00
F		0:00
G		0:00
H		0:00
I		0:00
J		0:00
K		0:00
L		0:00
M		0:00
N		0:00
O		0:00
P		0:00
Q		0:00
R		0:00
S		0:00
T		0:00
U		0:00
V		0:00
W		0:00
X		0:00
Y		0:00
Z		0:00
AA		0:00
AB		0:00
AC		0:00
AD		0:00
AE		0:00
AF		0:00
AG		0:00

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Shadow, expected values Shadow hours per year [h/year]
AH		0:00
AI		0:00
AJ		0:00
AK		0:00
AL		0:00
AM		0:00
AN		0:00
AO		0:00
AP		0:00
AQ		0:00
AR		0:00
AS		0:00
AT		0:00
AU		0:00
AV		0:00
AW		0:00
AX		0:00
AY		0:00
AZ		0:00
BA		0:00
BB		0:00
BC		0:00
BD		0:00
BE		0:00
BF		0:00
BG		0:00
BH		0:00
BI		0:00
BJ		0:00
BK		0:00
BL		0:00
BM		0:00
BN		0:00
BO		0:00
BP		0:00
BQ		0:00
BR		0:00
BS		0:00
BT		0:00
BU		0:00
BV		0:00
BW		0:00
BX		0:00
BY		0:00
BZ		0:00
CA		0:00
CB		0:00
CC		0:00
CD		0:00
CE		0:00
CF		0:00
CG		0:00
CH		0:00
CI		0:00
CJ		0:00
CK		0:00
CL		0:00
CM		0:00
CN		0:00
CO		0:00
CP		0:00
CQ		0:00
CR		0:00
CS		0:00

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Shadow, expected values Shadow hours per year [h/year]
CT		0:00
CU		0:00
CV		0:00
CW		0:00
CX		0:00
CY		0:00
CZ		0:00
DA		0:00
DB		0:00
DC		0:00
DD		0:00
DE		0:00
DF		0:00
DG		0:00
DH		0:00
DI		0:00
DJ		0:00
DK		0:00
DL		0:00
DM		0:00
DN		0:00
DO		0:00
DP		0:00
DQ		0:00
DR		0:00
DS		0:00
DT		0:00
DU		0:00
DV		0:00
DW		0:00
DX		0:00
DY		0:00
DZ		0:00
EA		0:00
EB		0:00
EC		0:00
ED		0:00
EE		0:00
EF		0:00
EG		0:00
EH		0:00
EI		0:00
EJ		0:00
EK		0:00
EL		0:00
EM		0:00
EN		0:00
EO		0:00
EP		0:00
EQ		0:00
ER		0:00
ES		0:00
ET		0:00
EU		0:00
EV		0:00
EW		0:00
EX		0:00
EY		0:00
EZ		0:00
FA		0:00
FB		0:00
FC		0:00
FD		0:00
FE		0:00

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Shadow, expected values Shadow hours per year [h/year]
FF		0:00
FG		0:00
FH		0:00
FI		0:00
FJ		0:00
FK		0:00
FL		0:00
FM		0:00
FN		0:00
FO		0:00
FP		0:00
FQ		0:00
FR		0:00
FS		0:00
FT		0:00
FU		0:00
FV		0:00
FW		0:00
FX		0:00
FY		0:00
FZ		0:00
GA		0:00
GB		0:00
GC		0:00
GD		0:00
GE		0:00
GF		0:00
GG		0:00
GH		0:00
GI		0:00
GJ		0:00
GK		0:00
GL		0:00
GM		0:00
GN		0:00
GO		0:00
GP		0:00
GQ		0:00
GR		0:00
GS		0:00
GT		0:00
GU		0:00
GV		0:00
GW		0:00
GX		0:00
GY		0:00
GZ		0:00
HA		0:00
HB		0:00
HC		0:00
HD		0:00
HE		0:00
HF		0:00
HG		0:00
HH		0:00
HI		0:00
HJ		0:00
HK		0:00
HL		0:00
HM		0:00
HN		0:00
HO		0:00
HP		0:00
HQ		0:00

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Shadow, expected values Shadow hours per year [h/year]
HR		0:00
HS		0:00
HT		0:00
HU		0:00
HV		0:00
HW		0:00
HX		0:00
HY		0:00
HZ		0:00
IA		0:00
IB		0:00
IC		0:00
ID		0:00
IE		0:00
IF		0:00
IG		0:00
IH		0:00
II		0:00
IJ		0:00
IK		0:00
IL		0:00
IM		0:00
IN		0:00
IO		0:00
IP		0:00
IQ		0:00
IR		0:00
IS		0:00
IT		0:00
IU		0:00
IV		0:00
IW		0:00
IX		0:00
IY		0:00
IZ		0:00
JA		0:00
JB		0:00
JC		0:00
JD		0:00
JE		0:00
JF		0:00
JG		0:00
JH		0:00
JI		0:00
JJ		0:00
JK		0:00
JL		0:00
JM		0:00
JN		0:00
JO		0:00
JP		0:00
JQ		0:00
JR		0:00
JS		0:00
JT		0:00
JU		0:00
JV		0:00
JW		0:00
JX		0:00
JY		0:00
JZ		0:00
KA		0:00
KB		0:00
KC		0:00

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Shadow, expected values Shadow hours per year [h/year]
KD		0:00
KE		0:00
KF		0:00
KG		0:00
KH		0:00
KI		0:00
KJ		0:00
KK		0:00
KL		0:00
KM		0:00
KN		0:00
KO		0:00
KP		0:00
KQ		0:00
KR		0:00
KS		0:00
KT		0:00
KU		0:00
KV		0:00
KW		0:00
KX		0:00
KY		0:00
KZ		0:00
LA		0:00
LB		0:00
LC		0:00
LD		0:00
LE		0:00
LF		0:00
LG		0:00
LH		0:00
LI		0:00
LJ		0:00
LK		0:00
LL		0:00
LM		0:00
LN		0:00
LO		0:00
LP		0:00
LQ		0:00
LR		0:00
LS		0:00
LT		0:00
LU		0:00
LV		0:00
LW		0:00
LX		0:00
LY		0:00
LZ		0:00
MA		0:00
MB		0:00
MC		0:00
MD		0:00
ME		0:00
MF		0:00
MG		0:00
MH		0:00
MI		0:00
MJ		0:00
MK		0:00
ML		0:00
MM		0:00
MN		0:00
MO		0:00

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Shadow, expected values Shadow hours per year [h/year]
MP		0:00
MQ		0:00
MR		0:00
MS		1:23
MT		0:00
MU		0:53
MV		1:17
MW		1:10
MX		0:00
MY		0:49
MZ		0:33
NA		0:00
NB		0:00
NC		0:44
ND		0:50
NE		0:00
NF		0:00
NG		0:00
NH		0:26
NI		0:42
NJ		0:44
NK		1:05
NL		0:00
NM		0:00
NN		0:00
NO		0:00
NP		0:00
NQ		0:00
NR		0:00
NS		0:00
NT		0:00
NU		0:00
NV		0:00
NW		0:00
NX		0:00
NY		0:00
NZ		0:00
OA		0:00
OB		0:00
OC		0:00
OD		0:00
OE		0:00
OF		0:00
OG		0:00
OH		0:00
OI		0:00
OJ		0:00
OK		0:00
OL		0:00
OM		0:00
ON		0:00
OO		0:00
OP		0:00
OQ		0:00
OR		0:00
OS		0:00
OT		0:00
OU		0:00
OV		0:00
OW		0:00
OX		0:00
OY		0:00
OZ		0:00
PA		0:00

To be continued on next page...

SHADOW - Main Result

Calculation: YPF_Canadon_Seco_RealCase

...continued from previous page

No.	Name	Shadow, expected values Shadow hours per year [h/year]
PB		0:00
PC		0:00
PD		0:00
PE		0:00
PF		0:00
PG		0:00
PH		0:00
PI		0:00
PJ		0:00
PK		0:00
PL		0:00
PM		0:00
PN		0:00
PO		0:00
PP	Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (432)	0:00
PQ		0:00
PR		6:52
PS		8:20
PT		9:55
PU		12:14
PV		10:19
PW		6:29
PX		0:00
PY		0:00
PZ		0:00
QA		0:00
QB		0:00
QC		0:00

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (32)	16:16	9:56
2	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (33)	0:00	0:00
3	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (34)	0:00	0:00
4	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (35)	0:00	0:00
5	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (36)	0:00	0:00
6	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (37)	0:00	0:00
7	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (38)	0:00	0:00
8	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (39)	0:00	0:00
9	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (40)	18:51	8:42
10	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (41)	0:00	0:00
11	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (42)	0:00	0:00
12	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (43)	0:00	0:00
13	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (44)	0:00	0:00
14	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (45)	3:05	1:23
15	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (46)	0:00	0:00
16	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (47)	0:00	0:00
17	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (48)	0:00	0:00
18	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (49)	0:00	0:00
19	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (50)	0:00	0:00
20	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (51)	4:07	2:34
21	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (52)	0:00	0:00
22	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (53)	0:00	0:00
23	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (54)	0:00	0:00
24	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (55)	0:00	0:00
25	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (56)	24:15	11:15
26	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (57)	0:00	0:00
27	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (58)	0:37	0:20
28	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (59)	0:00	0:00
29	GE WIND ENERGY 4.2-117 4230 117.0 !-! hub: 85.0 m (TOT: 143.5 m) (60)	0:00	0:00

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.