ENVIRONMENTAL IMPACT ASSESSMENT MATRIX FOR THE CONSTRUCTION OF THE PHOTOVOLTAIC POWER PLANT

Action	Environmental Component Exposed	Environmental aspect	Environmental impact	Extension	Intensity	Duration	Probability	Legal aspects	Unmitigated significance	original risk	Mitigation measures	Extension	Intensity	Duration	Probability	Legal aspects	significance with mitigation	mitigated risk	impact degree
Arrival of people and cargo at the Base	Flora and fauna	Transport of Non-Native Species	Invasion of Species	2	3	2	3	4	144	Medium	M1: The measures established in the Manual for the Prevention of Non-Native Species must be applied.	2	3	2	2	2	48	Low	Less than temporary minimum
Elimination of packaging of transported cargo	Soil	Waste generation	environment pollution	2	2	2	3	2	48	Low	M2: the provisions of the Waste Management Plan and the Instructions for waste preparation of the bases must be completed.	1	2	2	3	2	24	Low	Less than temporary minimum
Vehicle operation and movement of people	Soil	Interaction of personnel and vehicles with the substrate	Substrate disturbance	2	3	3	4	4	288	High	M3: (a) The activity will be carried out on the area already impacted by the base, (b) circulation through areas with vegetation must be avoided, (c) respect what is established as measures of approach to fauna, (d) respect maximum values of speed and (e) not cross the streams.	2	2	3	2	2	48	Low	Less than temporary minimum
Anchorage of the ship for unloading tasks	Water	Vessel activities near the coast	Alteration of the coastal fauna	2	2	2	4	4	128	Medium	M5: to minimize the impact of the vessels, (a) the provisions of Annex IV and the Polar Code regarding discharges will be complied with, (b) the operation time will be reduced to the shortest possible, (c) the discharge will be carried out mainly to a summer campaign and (d) a main site and an alternative site for downloading will be established.	2	2	2	3	2	48	Low	Less than temporary minimum
Use of boats or amphibians to unload materials and personnel	Fauna	Noise and vibration generation	harmful meddling	2	2	2	3	2	48	Low	M6: (a) Regular maintenance of all equipment to ensure its efficient operation, (b) the provisions of the wildlife approach manual will be respected, (c) vehicles will be used in a way that minimizes noise and (d) will control not to do activities that involve high levels of noise when there are nearby concentrations of fauna.	2	2	2	2	2	32	Low	Less than temporary minimum
Substrate perforation	Soil	Substrate perforation	Substrate disturbance	1	4	4	4	2	128	Medium	M16: (a) Carry out the minimum amount of drilling necessary, (b) drill in the already impacted sites of the base, (c) do not carry out drilling in surface watercourses, (d) the exposed permafrost must be covered in the shortest possible time , (e) drilling will not be allowed outside of the area and (f) the generation of meltwater in the drilling area will be avoided by removing accumulated snow in the area.	1	3	4	4	2	96	Low	Less than temporary minimum
	Soil	Waste generation	environment pollution	2	2	2	3	2	48	Low	M2: the provisions of the Waste Management Plan and the Instructions for waste preparation of the bases must be completed.	1	2	2	3	2	24	Low	Less than temporary minimum
	Fauna	Noise and vibration generation	harmful meddling	2	2	2	3	2	48	Low	M6: (a) Regular maintenance of all equipment to ensure its efficient operation, (b) the provisions of the wildlife approach manual will be respected, (c) vehicles will be used in a way that minimizes noise and (d) will control not to do activities that involve high levels of noise when there are nearby concentrations of fauna.	2	2	2	2	2	32	Low	Less than temporary minimum
transport of materials	Air	GEI emission	Atmospheric pollution	3	4	2	3	2	144	Medium	M4: Supervise the state of vehicles and machinery to avoid incomplete combustion and thus minimize CO2 emissions into the atmosphere.	3	3	2	2	2	72	Low	Less than temporary minimum
	Soil	Interaction of personnel and vehicles with the substrate	Substrate disturbance	2	3	3	4	2	144	Medium	M3: (a) The activity will be carried out on the area already impacted by the base, (b) circulation through areas with vegetation must be avoided, (c) respect what is established as measures of approach to fauna, (d) respect maximum values of speed and (e) not cross the streams.	2	2	3	3	2	72	Low	Less than temporary minimum
Installation of pillars	Fauna	Noise and vibration generation	harmful meddling	2	2	2	3	2	48	Low	M6: (a) Regular maintenance of all equipment to ensure its efficient operation, (b) the provisions of the wildlife approach manual will be respected, (c) vehicles will be used in a way that minimizes noise and (d) will control not to do activities that involve high levels of noise when there are nearby concentrations of fauna.	2	2	2	2	2	32	Low	Less than temporary minimum
	Soil	Waste generation	environment pollution	2	2	2	3	2	48	Low	M2: the provisions of the Waste Management Plan and the Instructions for waste preparation of the bases must be completed.	1	2	2	3	2	24	Low	Less than temporary minimum
	Soil	Introduction of anthropic elements	Alteration of the original relief	1	4	4	4	2	128	Medium	M17: Carry out this activity in the selected area since it is impacted by the existence of the old facilities of the base, therefore new slaughter areas are not generated.	1	3	4	4	2	96	Low	Less than temporary minimum
	Soil	Introduction of anthropic elements	Drain Modification	1	4	4	4	2	128	Medium	M19: (a) avoid the formation of snow tails and foot ice, (b) affect the minimum necessary surface area, (c) not incorporate anthropic elements into surface water courses and (d) control that the accumulation of Water.	1	3	4	4	2	96	Low	Less than temporary minimum

Installation of bases and support structure	Fauna	Noise and vibration generation	harmful meddling	2	2	2	3	2	48	Low	M6: (a) Regular maintenance of all equipment to ensure its efficient operation, (b) the provisions of the wildlife approach manual will be respected, (c) vehicles will be used in a way that minimizes noise and (d) will control not to do activities that involve high levels of noise when there are nearby concentrations of fauna.	2	2	2	2	2	32	Low	Less than temporary minimum
	Soil	Waste generation	environment pollution	2	2	2	3	2	48	Low	M2: the provisions of the Waste Management Plan and the Instructions for waste preparation of the bases must be completed.	1	2	2	3	2	24	Low	Less than temporary minimum
	Air	GEI emission	Atmospheric pollution	3	4	2	3	2	144	Medium	M4: Supervise the state of vehicles and machinery to avoid incomplete combustion and thus minimize CO2 emissions into the atmosphere.	3	3	2	2	2	72	Low	Less than temporary minimum
	Soil	Introduction of anthropic elements	Alteration of the original relief	1	4	4	4	2	128	Medium	M17: Carry out this activity in the selected area since it is impacted by the existence of the old facilities of the base, therefore new slaughter areas are not generated.	1	3	4	4	2	96	Low	Less than temporary minimum
	Soil	Introduction of anthropic elements	Drain Modification	1	4	4	4	2	128	Medium	M19: (a) avoid the formation of snow tails and foot ice, (b) affect the minimum necessary surface area, (c) not incorporate anthropic elements into surface watercourses and (d) control that the accumulation of Water.	1	3	4	4	2	96	Low	Less than temporary minimum
	Soil	Introduction of anthropic elements	Albedo Modification	2	3	4	4	1	96	Low	M27: (a) develop a layout of the plant in such a way that the panels are grouped as islands to avoid the “lake effect”, (b) select panels with non-reflective surfaces (in this case, it is planned to use solar panels built with reflection-reducing material (EVA), (c) carry out glare potential studies and, based on this, improve the azimuth and inclination angles in the plants in order to reduce or avoid completely the glare at certain points (track, tower, paths, etc.) that interfere with performance of base operations.	2	2	4	4	1	64	Low	Less than temporary minimum
Connection and commissioning	Fauna	Noise and vibration generation	harmful meddling	2	2	2	3	2	48	Low	M6: (a) Regular maintenance of all equipment to ensure its efficient operation, (b) the provisions of the wildlife approach manual will be respected, (c) vehicles will be used in a way that minimizes noise and (d) will control not to do activities that involve high levels of noise when there are nearby concentrations of fauna.	2	2	2	2	2	32	Low	Less than temporary minimum
	Soil	Waste generation	environment pollution	2	2	2	3	2	48	Low	M2: the provisions of the Waste Management Plan and the Instructions for waste preparation of the bases must be completed.	1	2	2	3	2	24	Low	Less than temporary minimum
Presence of the solar field	Soil	Waste generation	environment pollution	2	2	2	3	2	48	Low	M2: the provisions of the Waste Management Plan and the Instructions for waste preparation of the bases must be completed.	1	2	2	3	2	24	Low	Less than temporary minimum
	Water	Water consumption	Excessive use	3	3	4	4	2	288	High	M11: (a) keep track of the water consumed and (b) establish a sustainable water consumption plan.	2	2	3	4	2	96	Low	Less than temporary minimum
	Soil	Introduction of anthropic elements	Drain Modification	1	4	4	4	2	128	Medium	M19: (a) avoid the formation of snow tails and foot ice, (b) affect the minimum necessary surface area, (c) not incorporate anthropic elements into surface water courses and (d) control that the accumulation of Water.	1	3	4	4	2	96	Low	Less than temporary minimum
	Soil	Introduction of anthropic elements	Albedo Modification	2	3	4	4	2	192	Medium	M27: (a) develop a layout of the plant in such a way that the panels are grouped as islands to avoid the “lake effect”, (b) select panels with non-reflective surfaces (in this case, it is planned to use solar panels built with reflection-reducing material (EVA), (c) carry out glare potential studies and, based on this, improve the azimuth and inclination angles in the plants in order to reduce or avoid completely the glare at certain points (track, tower, paths, etc.) that interfere with performance of base operations.	2	2	4	3	1	48	Low	Less than temporary minimum
	Soil	Introduction of anthropic elements	landscape modification	1	4	3	4	2	96	Low	M17: Carry out this activity in the selected area since it is impacted by the existence of the old facilities of the base, therefore new slaughter areas are not generated.	1	3	4	4	2	96	Low	Less than temporary minimum