ENVIRONMENTAL MANAGEMENT PLAN

Version 6.0, March 28, 2019

Environmental and Social Management Framework specifies environmental and social procedures for implemented projects to adhere to, including Environmental Management Plan, which are consistent Serbian national legislation.

Project IF ID: 1417

I. MITIGATION PLAN

No.	Phase	Issue	Mitigating Measure	Cost of Mitigation (If Substantial)	Responsibility*	Supervision observation and comments (to be filled out during supervision)
1	Phase Development of polyol synthesis based on waste PET, glycerin and vegetable oils	•Raw materials; 1.1. PET, glycerin and vegetable oils (soybean, rapeseed, sunflower) are not dangerous chemicals, but if spilled, they can cause concern and resentment for citizens.	1.1. Maximum quantity of raw materials in stock up to 2 tons at a time. Procurement of raw materials in original packaging. Storage of raw materials in a	1.1. The price of raw materials increases with decreasing the quantity ordered.	1.1.Grant beneficiary	

No.	Phase	Issue	Mitigating Measure	Cost of Mitigation (If Substantial)	Responsibility*	Supervision observation and comments (to be filled out during supervision)
			warehouse approved by the competent authority. The floor in the warehouse is impermeable and prevents the diffusion of leaked raw materials into the soil.			
		1.2. The polyol synthesis process at this development phase is carried out in a 70l volume pilot reactor at elevated temperature at atmospheric pressure. Any damage to the valve seal to expel the	1.2. Below the chemical reactor there is always a receptacle of 200l capacity which, in the case of a leak, can accept the entire reaction mass.	1.2. This measure does not require significant additional funding.	1.2.Grant beneficiary	

No.	Phase	Issue	Mitigating Measure	Cost of Mitigation (If Substantial)	Responsibility*	Supervision observation and comments (to be filled out during supervision)
		synthesized polyol may result in the leakage of a hot reaction mass during the reaction. 1.3. The resulting polyol as an intermediate in the production of polyol systems intended for the production of expanded and non-expanded polyurethanes is a viscous, non-volatile, poorly flammable, oily liquid. If poured out, it can cause concern and resentment for	1.3. The resulting polyol is stored in 200l metal containers, in a special place in the semi-finished warehouse, out of reach of the unemployed.	1.3. This measure does not require significant additional funding.	1.3. Grant beneficiary	

No.	Phase	Issue	Mitigating Measure	Cost of Mitigation (If Substantial)	Responsibility*	Supervision observation and comments (to be filled out during supervision)
		citizens.				
Operation	Phase Development of polyol systems based on previously described polyols.	•2.1. Raw materials; Polyol systems consist of previously obtained polyols, water, surfactants (not dangerous substances). Catalysts of urethane reaction are hazardous substances based on toxicity.	2.1. Maximum quantity of non-hazardous raw materials in stock up to 2t at a time. Procurement of raw materials in original packaging. Storage of raw materials in a warehouse approved by the competent authority. The floor in the warehouse is	2.1. The price of raw materials is increasing with decreasing the quantity ordered.	2.1. Grant beneficiary.	

No.	Phase	Issue	Mitigating Measure	Cost of Mitigation (If Substantial)	Responsibility*	Supervision observation and comments (to be filled out during supervision)
			impermeable and prevents the diffusion of leaked raw materials into the soil. Catalysts (hazardous materials) are supplied in their original packaging in a maximum amount of 20 kg and stored in a special place separated from other chemicals, with a tank under each container.			

No.	Phase	Issue	Mitigating Measure	Cost of Mitigation (If Substantial)	Responsibility*	Supervision observation and comments (to be filled out during supervision)
		•2.2. The production process of polyol systems represents the homogenization of polyols and auxiliaries and takes place in a 50l volume pilot mixer. It is a process without a chemical reaction.	2.2. The pilot mixer does not have a valve at the bottom and there is no possibility of leakage.	2.2. Insignificant additional investment.	2.2. Grant beneficiary.	
		•2.3. The polyol system, based on catalyst participation (up to 1%), is classified as a toxic substance.	2.3. In the development phase, NEVA uses such designed polyol systems exclusively in its own polyurethane production. At this stage of product development,	2.3. There is no increase in costs.	2.3. Grant beneficiary.	

No.	Phase	Issue	Mitigating Measure	Cost of Mitigation (If Substantial)	Responsibility*	Supervision observation and comments (to be filled out during supervision)
			there is no storage and transport of trial polyol systems.			

*Items indicated to be the responsibility of the contractor shall be specified in the bid documents

II. MONITORING PLAN

No.	Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored/ type of monitoring equipment?	When is the parameter to be monitored- frequency of measurement or continuous?	Monitoring Cost What is the cost of equipment or contractor charges to perform monitoring?	Responsibility	Supervision observation and comments (to be filled out during supervision with reference to adequate measuring reports)

MATCHING GRANTS Program

No.	Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored/ type of monitoring equipment?	When is the parameter to be monitored- frequency of measurement or continuous?	Monitoring Cost What is the cost of equipment or contractor charges to perform monitoring?	Responsibility	Supervision observation and comments (to be filled out during supervision with reference to adequate measuring reports)
1.	Phase Development of polyol synthesis based on waste PET, glycerin and vegetable oils	1.1. Condition in raw material warehouse. 1.2. Condition of equipment.	1.1. Warehouse 1.2. The facility where the pilot plant is located	1.1. Visual inspection by a trained employee (since the substances are non-volatile there are no automatic sensors). 1.2. Preventive inspection of the condition of the equipment	1.1. Daily 1.2. Periodically (preventive quarterly inspection and annual overhaul)	1.1. No additional cost 1.2. (200-300) eur / g	1.1. Grant beneficiary 1.2. Contractor/Grant beneficiary	

No.	Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored/ type of monitoring equipment?	When is the parameter to be monitored- frequency of measurement or continuous?	Monitoring Cost What is the cost of equipment or contractor charges to perform monitoring?	Responsibility	Supervision observation and comments (to be filled out during supervision with reference to adequate measuring reports)
		1.3. Condition in the semi-finished warehouse.	1.3. Warehouse	by an expert. Usual tools for machine and electrical maintenance. 1.3. Visual inspection by a trained employee (since the substances are non-volatile, there are no automatic sensors).	1.3. Daily	1.3. No additional cost	1.3. Grant beneficiary	

No.	Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored/ type of monitoring equipment?	When is the parameter to be monitored- frequency of measurement or continuous?	Monitoring Cost What is the cost of equipment or contractor charges to perform monitoring?	Responsibility	Supervision observation and comments (to be filled out during supervision with reference to adequate measuring reports)
2.	Phase Development of polyol systems based on previously described polyols.	2.1. Condition in the warehouse of raw materials and semi-finished products. 2.2. Condition of equipment.	2.1. Raw material warehouse and semi-finished warehouse. 2.2. The facility where the equipment is located.	2.1. Visual inspection by a trained employee. For volatile catalytic converters sensor with sound exciter. 2.2. Preventive inspection of the condition of the equipment by an expert. Usual tools	2.1. Everyday visual inspection. Periodic preventive inspection of the alert system. 2.2. Periodically (Preventive quarterly inspection and annual overhaul).	2.1. (100-150) eur / g. 2.2. (100-150) EUR / g.	2.1. Authorized service / Grant beneficiary 2.2. Contractor / Grant beneficiary	

MATCHING GRANTS Program

No.	Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored/ type of monitoring equipment?	When is the parameter to be monitored- frequency of measurement or continuous?	Monitoring Cost What is the cost of equipment or contractor charges to perform monitoring?	Responsibility	Supervision observation and comments (to be filled out during supervision with reference to adequate measuring reports)
				for mechanical and electrical maintenance.				

III. PUBLIC CONSULTATION DETAILS AND MINUTES OF MEETING FOR THE ENVIRONMENTAL MANAGEMENT PLAN

Provide details on:

1. Manner in which notification of the consultation was announced: media(s) used, date(s), description or copy of the announcement
2. Date(s) consultation(s) was (were) held
3. Location(s) consultation(s) was (were) held
4. Who was specifically invited (Name, Organization or Occupation, Telephone/Fax/e-mail number/address (home and/or office)

5. List of Attendees (Name, organization or occupation, contact details)
6. Meeting Agenda
7. Summary Meeting Minutes (Comments, Questions and Response by Presenters)
8. List of decisions reached, and any actions agreed upon with schedules and deadlines and responsibilities.