

Background for the pulp mill project

As part of UPM's growth plan, the company is conducting an environmental and social impact study for a possible pulp mill following the Uruguayan regulation.

The pulp mill will be located on the left bank of the Río Negro, five kilometers downstream of the city of Paso de los Toros and the town of Centenario, in the department of Durazno, Central region of Uruguay.

The production capacity for bleached eucalyptus kraft pulp will be around 2 million tons per year. The plant will use the European Union Best Available Techniques (BAT), ensuring the best possible environmental performance.

The existing two world-scale pulp mills operate under one of the strictest environmental regulatory frameworks worldwide for the industry and their impacts are well-known. Uruguayan environmental authorities have wide experience in assessing and controlling this industry.

The UPM Fray Bentos mill performance has been used as a basis to forecast the expected emissions.

Potential benefits of the project

The UPM project would have a significant impact on the country's development. It is estimated to increase GDP by 2% and to generate over 120 MUSD per year in tax collection from the value chain. It could create about 8,000 permanent jobs in industrial operations, in plantations, harvesting, port operations and related services.

The forest basin that will supply raw material to the new plant is located in the central-northeast region. This region is the relatively least developed in the country in terms of the proportion of households below the poverty line and the conditions for regional competitiveness. There are also shortcomings in the socio-economic dimension and infrastructure conditions, such as roads and highways.

All these restricts the development of economic activities by the private sector, as well as new employment opportunities and the possibility of community development. Upgrading the rail, roads and port, could contribute to overall development by providing better access to education, jobs and medical services in rural communities.

Also, strengthening capabilities in the areas of technology, innovation and environmental protection would maximize the positive impact of the planned mill in the country. The project is expected to generate new skills, products and services, develop local economy and about 600 small and medium-sized enterprises.

The planned pulp mill would also contribute to consolidating the transformation of the energy matrix, as it would increase renewable energy production by 10%.

The EsIA process and methodology

The submission of the environmental impact study is part of the process required by Uruguayan regulations to obtain the Preliminary Environmental Authorization (AAP).

An environmental and social impact study consists of description of the planned pulp mill, identification and assessment of the potential environmental and social impacts during the construction and operational phases, mitigation measures, as well as overall conclusions.

The standard process includes questioning and answering between the authorities and the company as well as stakeholder hearings.

The study has been done by consulting companies EIA-Estudio Ingeniería Ambiental (Uruguay) and Ecometrix (Canada), both having extensive experience in the area.

Conclusions

The study concludes that the new mill will not have negative impacts to human health, living conditions, urban structure, and land use, cultural environment, wildlife and conservation sites, soil, bedrocks and groundwater.

The main findings of the study, as well as from the social monitoring based on Fray Bentos experience cover the following topics:

- temporary housing, services and security
- traffic increase
- waste generation
- air quality
- water quality and usage

All these findings are acceptable and can be managed by implementing identified mitigation measures. The compliance with the BAT ensures the best possible environmental performance.

As the main conclusion of the analysis is that the water quality of the Río Negro today is affected by high nutrients levels. Existing eutrophication will continue if no additional measures are taken.

With the planned mill and the implementation of the minimum flow, the Río Negro water quality would remain at the existing level.

With the implementation of the Río Negro initiative and ensuring that best practices are carried out by all relevant stakeholders, water quality could be even improved in medium to long term.

UPM is committed to support initiatives to improve the water quality in the Río Negro, as well as providing financial support to improve effluent treatment in Paso de los Toros and Centenario through a contribution of 10.5 M USD.

Appendix 1.

Main findings of potential impacts and planned solutions

TOPIC: TEMPORARY HOUSING, SERVICES AND SECURITY	Social dimension	Construction phase	High significance
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- The peak of manpower is expected to reach over 5,000 persons
- Social unrest including free time activities
- The need for a significant amount of labor implies the installation of temporary accommodation
- Distribution of workers in temporary housing facilities: Paso de los Toros: 40-50 %; Centenario: 10-20 %; Durazno: 30-40 %
- Services assessed: waste disposal, sanitation, water and electricity supply, health, security, public transportation, education, recreation

Solutions

- Regional planning and decision making considering all needs of services including security, and quality free time activities
- Quality standard introduced for workers' housing solutions to avoid concentration, secure functionality and integration to communities
- Housing solutions distributed along different cities based on available infrastructure, services and integration to communities
- Combination of temporary and permanent housing solution to avoid excess of supply after construction
- UPM will build in the area of influence 60 permanent houses that will be part of the temporary housing supply and will later be transferred to the State*

* Investment Agreement signed between ROU and UPM

TOPIC: TRAFFIC INCREASE	Social dimension	Construction and operational phase	Medium significance
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- Disturbances to population of nearby localities
- The greatest impact will be concentrated near to the mill due to peaks in staff working in construction
- Increase of the presence of trucks in the area nearby the mill during the operational phase
- Route capacity will not be significantly affected during operational phase

Solutions

- Planning for smooth traffic flow and improved road safety by
 - Flyover construction, organize safe turnings while widening main routes
 - Increase traffic signals and safety awareness through education
- Reinforcement of route pavements
- Speed awareness education and control
- New solutions for the transportation volumes through high performance vehicles

TOPIC: WASTE GENERATION	Environmental dimension	Construction and operational phase	<input checked="" type="checkbox"/> High significance
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- During construction phase urban waste
- During operational phase the largest mill waste component is ash and different sludges
- Residual inorganic materials is deposited in landfill sites
- Most of the waste generated in the process can be reused

Solutions

- Application of European Union Best Available Techniques (BAT), in compliance with the national legal framework
- Promoting circular economy (reduce, reuse, and recycle), finding innovative solutions targeting to zero waste by 2030
- Regional planning for waste solutions
- Constructing a landfill to the site based on international standards and local regulation

TOPIC: AIR QUALITY	Social and environmental dimension	Operational phase	<input type="checkbox"/> Low significance
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- Single odor events near by the mill could cause nuisance, but not impacts to health
- In Centenario and Paso de los Toros, odors could be noticed during single events with a variable duration estimated from an hour to one day, totally three to four days per year (in about 20 different single events)

Solutions

- Application of European Union Best Available Techniques (BAT), in compliance with the national legal framework
- High qualified and experienced international and local team

TOPIC: MANAGEMENT AND USE OF WATER	Environmental dimension	Operational phase	<input type="checkbox"/> Low significance
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- The planned pulp mill will take water from the Rio Negro
- The long-term average annual use of water is less than 1% of the river's average flow rate in Paso de los Toros
- The operations require about 1,5 m³ of water per second. Around 80% of that goes back to the river and the rest is evaporated
- The use of groundwater is mainly restricted to the construction phase to supply workers needs
- Groundwater is not use for pulp production processes of the mill

Solutions

- Application of European Union Best Available Techniques (BAT), in compliance with the national legal framework
- Efficient water use with suitable recycling techniques

TOPIC: NUTRIENT LOAD	Environmental dimension	Operational phase	☐ Low significance
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- Estimated contribution of the plant:
 - To the phosphorus load: about 2 to 3% of the current load of the river. The remaining 97 to 98% comes from other sources
 - To the nitrogen load: about 1 to 2% of the current load of the river
- The operation of the plant will cause no significant change in the water quality level
- In Paso de los Toros and Centenario, both located upstream of the plant, water quality will not be affected by the mill
- Only 5 km downstream of the discharge, effluent concentration may vary from near zero (during high flow rate periods) to a maximum of 1.6% (low flow rate periods)

Solutions

- Application of European Union Best Available Techniques (BAT), in compliance with the national legal framework
- Mechanical, chemical and biological effluent treatment processes
- The government issued a decree in order to improve Rio Negro water quality
- The target is to activate all stakeholders to use best practices within the catchment area of Rio Negro