

June 8, 2020  
Birzeit

## **Addendum to the “Environment and Health Assessment Study for the Hot Blend Asphalt<sup>1</sup> Plant (HBAP) in Birzeit Town”**

### **Prepared by Birzeit University**

On May 26, 2020, an academic committee formed by Birzeit University’s President prepared a study that evaluated the health and environmental impact of constructing a Hot Blend Asphalt Plant (HBAP) in the town of Birzeit. Once the study was issued, the committee was provided with a declaration presenting the proposed factory as an assembly plant and not a as manufacturing one, and that the HBAP is not intended to produce bitumen (a major component of asphalt production), but will import Bitumen from Israel for mixing and processing in Birzeit HBAP. According to this declaration, this would mean that the plant is safe and will not pollute the environment.

Based on that, we are clarifying the following:

1. According to the source, the proposed factory in Birzeit is only for mixing the raw materials and not for manufacturing them. We would like to emphasize that the Birzeit University’s study and analysis focused of the health risks and environmental impacts of a hot blend asphalt plant (HBAP), as stated in the EIA study, and not a bitumen manufacturing facility (BMF). The Committee is aware that the main requirements for establishing a bitumen plant are not available in Palestine due to technical, financial, environmental and political reasons. The main reason is the lack of natural raw bitumen sources in Palestine, or the lack of possibility for manufacturing bitumen from crude oil in an oil refinery. In addition, the bitumen production plant was not mentioned at all in the environmental impact assessment (EIA) study submitted by the investor. Consequently, the committee presented an assessment of the health and environmental effects resulting from the various stages of unit operations including treatment, mixing and processing of the HBAP (storage, mixing, recycling, drying, and heating using fuel burning).

**Thus, even if the HBAP plant is about mixing raw materials instead of manufacturing Bitumen, it is still not safe to install the factory in a location that does not exceed 150 meters from residential areas and adjacent factories!**

2. In the following, we explain the difference between manufacturing the bitumen itself and the hot mixing process of raw materials (gravel, sand and bitumen) to produce ready-made asphalt for paving:
  - Bitumen Production Facility (BPF): Bitumen [cement asphalt] is produced from either a “raw bitumen” natural source or is industrially purified from crude oil in an oil refinery. In order to produce bitumen, the raw bitumen must be available as a natural source or crude oil must be shipped in sufficient quantities as a "synthetic" bitumen production source, using a vacuum distillation process, for example. We emphasize again that our study did not address this type of facility or an assessment of its health and environmental risks.
  - Hot Blend Asphalt Plant, HBAP: As is the case of the proposed hot blend plant in Birzeit: In this type of plant, cold bitumen is purchased manufactured in an oil refinery. It is then heated at the factory site using the appropriate fuel (petrol oil or natural gas). This process calls for heating raw materials (gravel of various types and sizes, and the petrochemical substance known as bitumen) to a temperature of 170-180°C to

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<sup>1</sup> To avoid misunderstanding: “bitumen” is known as “cement asphalt”, and the term “asphalt” is a product of the HBAP plant consisting of an aggregate (gravel, sand) mixed with bitumen (asphalt cement) with additives such as rubber (tires) and reclaimed asphalt pavement (RAP)

remove moisture. It is this process in particular that produces toxic, volatile chemicals that may remain suspended in the air for up to 18 hours. These emissions are originally solid materials that are broken down into fine particles by heating (burning) and become suspended in the air, and can be inhaled by nearby residents who live close to the factory location. The amount of air pollutants from the proposed plant reaches an aerial distance of 2.063 km in the best modelling trial for the dispersion of diverse airborne pollutants (US EPA SCREEN3-v4).

- The asphalt production process, as in the HBAP, is clear and well documented in the literature and field practices. The Birzeit University study evaluated the EIA study of the proposed HBAP plant and not the bitumen production facility (BPF). To determine the safe distance to the nearest residential area to the factory site, the Birzeit University study used a computer program issued by the United States Environmental Protection Agency [SCREEN3 v4], as a guide to measure the dispersion of airborne pollutants (particulate matter, volatile organic compounds, total organic carbon, aromatic hydrocarbons, fumes, etc.) emitted from the hot mixing asphalt plant (HBAP) and not for the bitumen production facility (BPF). The references cited in the Birzeit University study estimates the added sources of annual pollution loads for air emissions from the suggested HBAP in Birzeit. For this purpose the committee utilized the available data from the technical specifications found in the appendix of the EIA report submitted by the investor.

**Conclusion:**

**The hot mixing of raw materials to produce ready-to-use asphalt is an unsafe process and requires multiple manufacturing stages (drying, heating and burning) under very high temperatures. It is not safe to establish and operate a Hot Blend Asphalt Plant in a location close to surrounding residents.**

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