For combustion to occur three things must be present: a fuel to be burned, a source of oxygen, and a source of heat. We tested Platform 1 in a chamber with oxygen and in a chamber filled only with nitrogen, where one of the essential elements of combustion (oxygen) was absent. The period was substantially equivalent under both atmospheres, suggesting the view that combustion does not occur in the operation of Platform 1 with tobacco sticks.

Smoke generated from the combustion of plants such as tobacco contains solid particles. We assessed the aerosol from tobacco sticks heated in the Platform 1 device and the smoke from a reference 3MM cigarette using scanning electron microscopy (SEM). We found that unlike cigarette smoke which contains solid particles, no solid particles could be quantified in the aerosol generated by the Platform 1 system. Under these experimental conditions, further confirming that combustion does not occur during use of Platform 1 with tobacco sticks.

**FUEL + OXIDIZER + ENERGY = SMOKE & ASH**

In a cigarette, heating (providing energy to tobacco leaf) in the presence of oxygen results in a combustion producing smoke.

When a cigarette is smoked, the tobacco reaches temperatures of around 600°C in-between puffs and can exceed 1000°C during puffing as oxygen supply increases. In contrast, during use, Platform 1 precisely controls the tobacco temperature in the tobacco sticks. The highest temperature of the tobacco next to the heating element reaches approximately 200°C, well below the temperature required for combustion of tobacco (which is in excess of 400°C). Unlike puffing on a lit cigarette, puffing on a tobacco stick draws air through the product, which reduces the temperature of the tobacco and the heating element. This is due to the cooling effect that the air has on the tobacco at the operating temperatures of the Platform 1 system.

**Tobacco sticks in Platform 1**

Before use

After use

**The operation of Platform 1 produces neither light nor ash, so it does not produce during combustion.**

**It is supported that there is no combustion when using heatsticks in the Platform device as intended.**

When Platform 1 is in operation, the tobacco in the tobacco stick is heated and substances present in the tobacco leaf such as water and nicotine evaporate as the tobacco dries out. At temperatures between 200°C to 300°C, a mild thermal decomposition (torrefaction) takes place, which results in tobacco changing color. This process is similar to what happens when coffee beans are roasted, resulting in dark brown and brittle beans.

**The distinctive flavor of coffee beans is produced by raw beans.** A process of torrefaction.

**Smoke is composed of airborne solid and liquid particles and gases evolved when an organic material undergoes pyrolysis or combustion, together with air that is mixed into the mass.**

- Gross et al., 1967

Robust scientific experiments confirm that using Platform 1 to heat tobacco sticks does not result in the combustion of tobacco. The absence of combustion in tobacco sticks when used as intended in the Platform 1 device has been verified by scientific experts in numerous countries including Italy, Poland, Japan, and the U.S.

Related Risk Products (RRPs) is the term we use to refer to products with the potential to reduce individual and population harm in comparison to smoking combustion cigarettes. RRPs have one or various stages of development, and we are conducting extensive and rigorous scientific studies to determine whether we can support claims for such products of reduced exposure to harmful and potentially harmful constituents in smoke, and ultimately claims of reduced disease risk when compared to smoking combustion cigarettes. Before making any such claims, we will rigorously evaluate the full range of data from the relevant scientific studies to determine whether they substantiate reduced exposure or risk. Any such claims may also be subject to government review and approval, as is the case in the U.S. today.