



May 20, 2019

Richard Corey
Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814
rcorey@arb.ca.gov

Subject: Comments on May 23rd, 2019 Board Item 19-5-2 regarding Proposed Updates to the Architectural Coatings Suggested Control Measure

Dear Mr. Corey:

Thank you for the opportunity for Pellucere Technologies, Inc. (Pellucere) to comment on Board Item 19-5-2 that updates the Architectural Coatings Suggested Control Measure (ACSCM). We understand the ruling will likely move forward May 23rd, but we are asking for help on how our unique product could be incorporated into the ACSCM in the near term instead of the 2029 when it appears the next update will occur.

As background, Pellucere is a material science company focused on enabling Distributed Energy Resource (DER) products like photovoltaics (PV) and energy efficient windows to produce (or save) more clean, renewable electricity. Pellucere produces MoreSun[®] which is the world's first and only field-installable, anti-reflective and anti-soiling optical coating for PV Solar plants. MoreSun is being commercially deployed in the US, Europe, and Asia and has proven to increase the energy yield of solar panels by 4-4.5% and reduces the need to wash solar panels.

Unfortunately, MoreSun's optical coating does not appear to fit within the ACSCM's existing or proposed categories due to its special purpose and properties. It is also unique in that it's only application will be to sell to industrial scale PV owners to cover millions of outdoor, installed solar panels in remote California locations all before the end of 2023. Unlike other architectural coatings, MoreSun's optical coatings are applied to glass by sponge with an extremely low coating per area ratio. This is necessary because the desired thickness of the cured coating needs to be under 200 nanometers thick to ensure the optical clarity that increases light transmission to the solar silicon layer. Much of the R&D completed by Pellucere centered around developing highly efficient and precision applicator technology to achieve the precision technical deposition requirements. As a result, MoreSun has lower VOCs per square foot of coated surfaces than many other already approved and proposed architectural coatings.

Pellucere is requesting CARB help develop a pathway for MoreSun's use in California to help enhance existing solar electricity gains simply by using the MoreSun product.

As ACSCM is currently written, architectural coatings are not regulated on the basis of VOCs per coated area but are instead regulated on the *basis of VOCs per liter of coating material*. The ACSCM does not accurately represent the VOCs per coated surface for optical coatings like MoreSun. Even at peak anticipated coating rates, the total VOC emissions from MoreSun would represent 0.06% of area-wide VOCs or 0.6% of architectural coating VOCs in a peak coating year versus the baseline cited in the SCM.

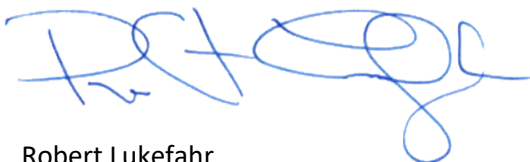
MoreSun may only be applied to solar facilities that do not have factory-installed AR optical coatings (this would include an estimated 5,000 MW of previously installed solar facilities in California). As the optical coating is expected to last the remaining life of the facilities, this one-time application will improve energy yield of these existing solar arrays by an estimated 4-4.5% for ten years or more; this could add approximately 400,000 MWh per year of renewable electricity generation, and reduce NOx emissions by up to 43 tons per year and reduce CO₂ emissions by 150,000 tons per year or more. The one-time increase in VOCs will thus be more than offset by the long-term reduction in NOx emissions with the added benefit of CO₂ emissions reduction and additional renewable energy production from previously-installed facilities. MoreSun has a finite number of pre-existing solar facilities where it can be installed; there is a short “window” of time in which the product must be applied in order to obtain the full benefits of using the product both in terms of life-of-plant and to be eligible for Federal tax credits.

Pellucere has met with CARB staff on several occasions to discuss the MoreSun product and to determine if this new family of field-installed optical coatings should best be considered under existing optical coating regulations or under a possible new category in Architectural Coatings. Pellucere submitted extensive information regarding MoreSun’s application methods, emissions profile, benefits in reducing NOx and CO₂, two potential methods to ensure and to enforce the low-VOC per area coated metrics provided above, and suggested limits that could apply to this new product category which – when coupled with application limits – would ensure that field-installed optical coatings would have an emissions profile consistent with other proposed architectural coatings. The most recent meeting on May 17th, 2019 with Michael Benjamin was helpful in identifying a possibly pathway to work with CARB to allow the use of the MoreSun product “soon”.

Now, we understand the time constraints require this Model Control Measure by CARB be approved to assist local Air Districts as soon as possible. We very much hope CARB staff can help Pellucere develop a pathway for local Air Districts to use as we are planning to request approval for use of MoreSun in 7 different air districts across the state. We look forward to working with CARB on a solution that can be done quickly with CARB staff assistance that could greatly benefit Air District staff in conserving time and resources to avoid seven different reviews across the state.

Thank you for the opportunity to submit these comments.

Sincerely,



Robert Lukefahr
Chief Executive Officer
Pellucere Technologies, Inc.