

DOCKETED

Docket Number:	17-HYD-01
Project Title:	Renewable Hydrogen Transportation Fuel Production
TN #:	220835
Document Title:	Nice America Research, Inc. Comments Feedback to 17-HYD-01
Description:	N/A
Filer:	System
Organization:	Nice America Research, Inc./Jeff Pickles
Submitter Role:	Public
Submission Date:	8/18/2017 5:06:05 PM
Docketed Date:	8/18/2017

Comment Received From: Jeff Pickles

Submitted On: 8/18/2017

Docket Number: 17-HYD-01

Feedback to 17-HYD-01

Additional submitted attachment is included below.

NICE AMERICA RESEARCH, INC.

2091 Stierlin Court, Mountain View, CA 94043

T: +1.650.772.5050 F: +1.650.772.5051

www.nicenergy.com



From:

Jeff Pickles

Senior Scientist

NICE America Research Inc.

2091 Stierlin Ct, Mountain View, CA 94043 USA

Direct Line: 650.772.5064 Mobile: 650.448.8856

Email: jeffpickles@nicenergy.com

To:

Jane Berner

California Energy Commission

Zero-Emission Vehicle & Infrastructure Office

Subject:

17-HYD-01 Renewable Hydrogen Transportation Fuel Production

Dear California Energy Commission,

NICE America Research Inc. is highly interested to participate in and partner with hydrogen station developers, equipment manufacturers, vehicle manufactures or organizations in a potential future RFP for renewable hydrogen production in California. We believe that renewable hydrogen production from all renewable resources and the distribution of hydrogen to fueling stations for all types of vehicles is a key area to support the growth of the hydrogen economy.

Our vision is to ensure the best use of any investment from the CEC into renewable hydrogen production to provide a compelling, long term renewable hydrogen generation resource that can provide fuel for the existing and future light duty vehicle station network, bus fleets and all other hydrogen fuel applications.

We believe that the intent of this described effort has the potential to validate the technical and financial performance for renewable hydrogen production and transportation systems and to enable investment to develop standardized renewable hydrogen production and transportation equipment which will allow for additional renewable hydrogen generators and transportation networks to be economically built throughout California and the world.

Please consider that hydrogen fuel industry feedback describes stations capacity should be on the order of ~1000 kg/day rather than ~100 kg/day to be commercially viable. It is a serious option that liquid hydrogen will be preferred for HFS in the future. Many factors contribute to preferring liquid including production at scale, purification, transportation cost and logistics, HFS energy use and more.

We recommend that the CEC consider increasing the renewable hydrogen production capacity to match available liquefier technology.

Please consider as this proposed renewable hydrogen plant is desired to be commercial and not a pilot plant, larger scale production will lower the \$/kg and provide the higher value for CEC investment. 1000 kg/day may be in a pilot plant category and actually increase the price at the pump.

Also consider that by the time this proposed 1000 kg/day plant is operational, many HFS could potentially be liquid supplied. It is possible that a renewable 1000 kg/day gaseous supply in a limited geographic area will not be a valuable investment for California.

Please consider that a renewable liquid hydrogen plant and liquid distribution trailer fleet will be a significant investment such that \$2M may not be enough funding to incentivize the industry into action.

This described 1000 kg/day effort requires a significant investment in renewable hydrogen production and in gas transportation assets. \$2M may be too low to significantly reduce the financial risk for this outlined effort which includes both production and transportation. It is a caution that if the CEC invests in a relatively small 1000 kg/day renewable hydrogen gaseous production and delivery network, the investment may become a stranded asset within the lifetime of the equipment of 20 years common for this type of investment due to the transition to liquid hydrogen.

Please also consider common industry practice for gas supply contracts. Our current gasoline market is a great example. A gasoline station typically does not have supply contracts from two different brand gasoline suppliers. In the early stages of hydrogen the field is limited and it may be contractually impractical to sell 1000 kg/day of renewable hydrogen into a limited market which already has established gas supply contracts which can guarantee supply for much more than 1000 kg/day.

Additionally due to the maturity of this market, operations and maintenance funding for the renewable hydrogen generation plant should be considered.

Respectfully,



Jeff Pickles

Senior Scientist

NICE America Research Inc.