

**Written Comments on the
HYDROGEN DRAFT SOLICITATION CONCEPTS
Alternative and Renewable Fuel and Vehicle Technology Program
Subject Area – Hydrogen Refueling Infrastructure Dated July 31 2015
Submitted by Paul Staples, HyGen Industries, Inc.
h24u@hygen.com**

California Energy Commission

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Re: CAFCP generated/consensus input on 15-HYD-01 Draft Solicitation Concepts for Hydrogen Refueling Infrastructure.

I did not object my company signing on to the aforementioned consensus document because there were a few good ideas presented. However there was one that just about wipes out all the other suggestions made, even the good ones. The 3rd. bullet item reads as follows:

- "Remove the H35 pressure requirement and make it optional for interested developers. (SECTION 10-F – Dual Dispenser Pressure Requirements) "

This is the worst suggestion I have yet to hear during any discussion of technical requirements since they imposed 700 bar at the behest of the Auto Industry. Not exactly the smartest industry for safety and common sense. Ask any owner of one of those Vegas, Corvairs, Corollas, and just about every model and make since, that has been recalled because of defects the industry stubbornly refused to recall and fix because it was perceived to be cheaper to pay death benefits of victims of those defects. They are at it again. No common sense. Everyone says it's a compromise making it optional for extra points??? The only compromise that station developers should be considering is where you make 700 bar optional. That is the only compromise that we should be making. 700 bar fueling has many problems, no small one is embrittlement, which is significantly more and causes valve failures, plumbing failures, compressor failures, takes up nearly 40% of the footprint, 40% of the systems cost, and is not expandable on 80% of the all retail stations (Sandia Report - SAND2014-3416). 700 bar is nowhere near ready for primetime. Using 700 bar is experimenting with the general public. Not a smart thing to do. Even Air Products was concerned about the costs when first proposed.

350 bar is the only safe and reliable dispensing that we have. Wherever there is both, and fuel to dispense, the 350 bar is almost w/o exception, going to work. Not so with 700 bar. In order to make sure that more stations are operational, all stations should be required to have 350 bar. Whether you have 700 bar or less, 350 bar is more likely to work. There is no commercial retail use of such high pressure gases. None, and there is a reason. IT'S TOO MUCH PRESSURE TO HANDLE SAFELY FOR THE GENERAL PUBLIC!

It's going to kill FCEVs by souring the market introduction when poor operation and inability to provide fueling will depress sales and give the auto industry every reason to go back to making SUVs. Setting back FCEVs by another 20 years. Why? "Because ZEVs just don't work or meet consumer demands, or are safe." Is what the'll respond. And God forbid there is an accident, gone forever. Go figure! 700 bar is the problem, not 350 bar. 350 bar is all well used, tested, is part of commercial systems in the market place, but 10,000 psi? Nowhere is that kind of pressures used in any commercial operation, much less at a retail operation with a public interface. Not even in industrial uses with trained personnel. Except maybe aerospace where rocket engine testing is required.

And they want you to get rid of the only dependable fueling option because they don't want to easily design the vehicles around the storage to give just 1 more 10' - 12' of space to add another cylinder to get the precious 300 mi. range they claim will sell the vehicles. The beta models worked great for years. The main thing of concern was more fueling infrastructure not so much with range. If 300 mi range was so important, they were close as it was at 250. They did not need 100% more fuel, just 20% more. All this cost, headache and safety problems for a measly 20%. That doesn't just conflict with common sense. It is insane.

Besides, making it optional in effect eliminates it from being used as stations will compete by price and few will be willing to offer it. You need a minimum dependable standard, and 700 bar is the absolute opposite of a dependable minimum standard.

Do not exempt from 350 bar, not if you want hydrogen fueling and FCEVs to succeed. 700 bar is the problem. I could arrange a line of experts that will say the same thing.

Paul Staples, Chairman/CEO
HyGen Industries, Inc.