2015 Toyota CES Press Preview - Bob Carter

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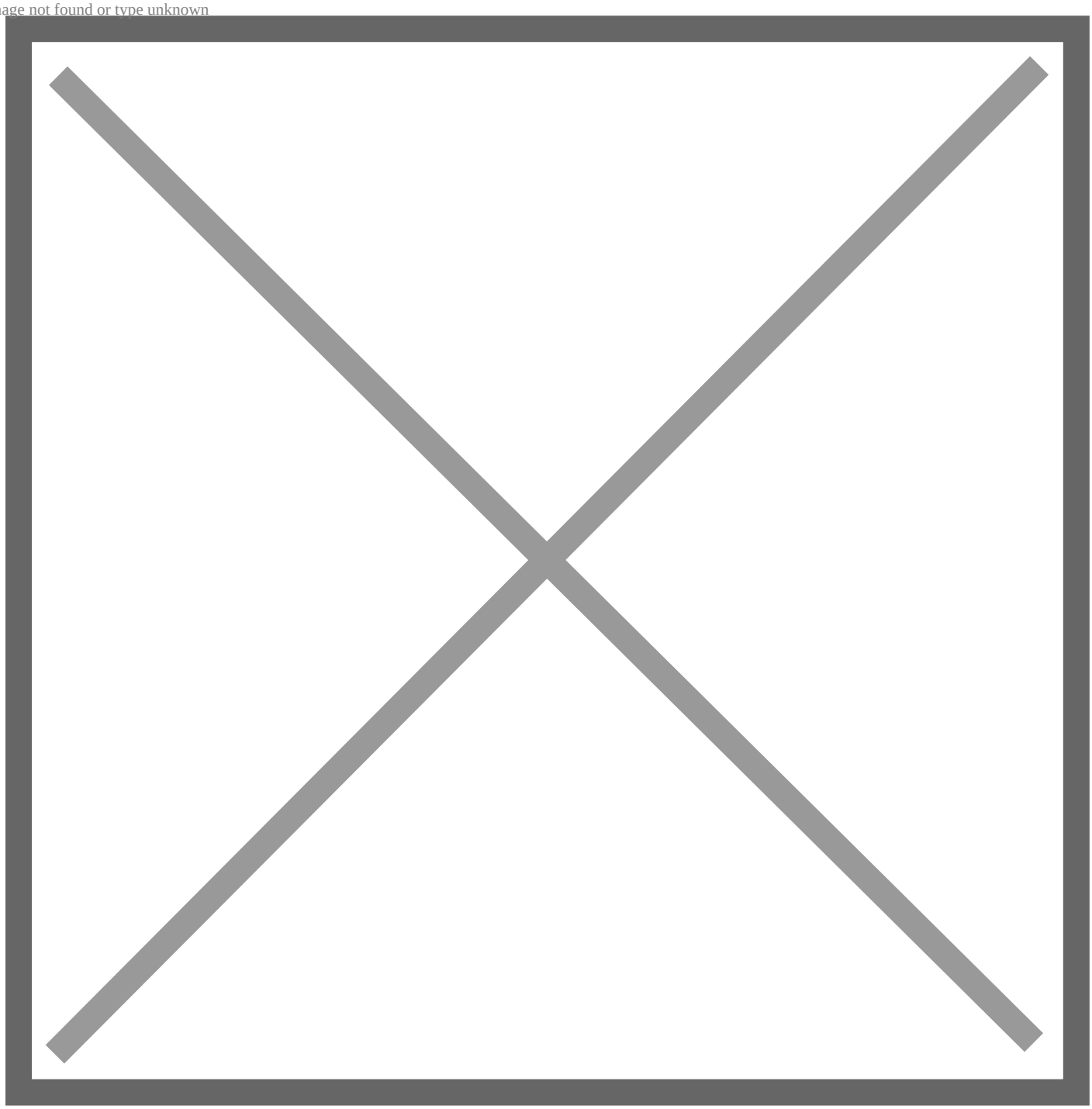

As prepared for:

2015 Toyota CES Press Preview
Monday, Jan. 5, 2015
Las Vegas, NV
Bob Carter, Senior Vice President – Automotive Operations, Toyota Motor Sales, U.S.A., Inc.

Thank you Dr. Kaku, for taking part in our news conference this afternoon and thank you all for joining us, as well.

Dr. Kaku graciously agreed to join us here at CES because our announcement today is about predicting the future … and how we plan to get there.

How we get there has a lot to do with his story … about that friendly wager between Mr. Ford and Mr. Edison.

Because that story is about how competitors can also be collaborators.

And it's about how after more than a century with the automobile we find ourselves at a turning point … where we're making decisions about socially significant technologies aimed at building a true hydrogen society over the next 100 years.

It was a year ago today that I stood here on stage and predicted that Hydrogen fuel cell technology would change the world …sooner… rather than later.

As that other famous futurist … Yogi Berra … once said… "It's tough to make predictions. Especially about the future."

I think Dr. Kaku would also agree with Yogi that … *"The future … ain't what it used to be."*

The future …which is what Mirai means in Japanese … arrives in October of this year in the US.

The Toyota Mirai is a midsize, four-door sedan. Its front wheels are driven by an electric motor. The electricity that powers that motor is made onboard …on-demand … as needed … by combining hydrogen gas with oxygen… producing zero emissions …other than water vapor.

Unlike other electric cars that rely on a large battery for power… Mirai can be re-fueled in about 5 minutes and travel about 300 miles on a single fill-up.

It will start-up in the morning …at minus 30 degrees below zero.

And as many of you have already heard …

Hello? Hello?

Ok, just a minute…

As I was saying … as many of you may already know …Mirai is capable of supplying enough energy to power home essentials …as well as your consumer electronics in an average house for up to a week in an emergency.

Think of it as having an electric generator enclosed in your garage with six feet of snow and 30 below outside …and zero emissions to worry about on the inside.

In fact … we see the *Toyota Fuel Cell System* in the new Mirai …as simply …a better battery.

More importantly … we agree with Dr. Kaku… that Hydrogen and Hydrogen fuel cell technology … will be …a social, environmental and economic game-changer.

Mr. Ford was correct:

Gasoline has been the primary fuel for the first 100 years of the automobile.

Technically … Mr. Edison was also correct:

The *electrification of the automobile* is already well on its way.

Evidence the beginning… and now-mainstream acceptance of Prius and the legions of the gas-electric hybrids that have followed.

We believe that *Hydrogen*-electric will be the primary fuel …for the next hundred years.

It will not happen over-night. The Mirai and the Prius …both industry changing vehicles *both* — high-risk gambles, were developed at a huge expense and fully in house … not just because we could do it … but because we should do it.

The same can be said about our commitment to do everything possible to *kick-start* the development of hydrogen re-fueling infrastructure.

Very simply we cannot have the car without the re-fueling stations. We know that the day-in-day-out ownership experience …will make or break this vision of a Hydrogen Society.

That's why Toyota will deliver on *both* the car and the ownership experience especially during the critical years of initial product roll-out from 2015 through 2020.

This will require a huge collaborative effort between government agencies and carmakers academia and energy providers …to create momentum that leads to sustainability.

The state of California is the global epicenterfor the Hydrogen movement.

Which is why it set-aside $200 million to help build 100 new stations … in key regions of the state as quickly as possible.

On May 1st of last year … things began happening quickly.

The California Energy Commission awarded more than $47 million of the $200 million in grants to build 28 stations.

More than half of those station grants went to energy provider … FirstElement for 19 stations across California. On that same day First Element and Toyota announced an initial financial collaboration… that included a $7.2 million loan to assist First Element in operations and maintenance.

But Toyota did not stop there. In fact we're just getting started.

In November we announced that our vision of a Hydrogen Society would expand beyond the borders of California.

Toyota Motor Sales and Air Liquide will collaborate to develop and supply a phased-in network of 12 dedicated Hydrogen stations in New York, New Jersey, Massachusetts, Connecticut, and Rhode Island.

With these commitments Toyota will direct a large portion of Mirai's global production over the first few years to these California and Northeast regions.

Our global production volume will steadily increase from about seven hundred units in 2015 to the tens of thousands in the 2020s.

By that time we believe that fueling infrastructure will reach sustainable growth in key regions as a business model.

Sometimes change can happen quickly.

Other times … change takes persistence … and a long view and unconventional methods.

Mostly we believe real change … requires collaboration.

The Toyota Collaborative Safety Research Center or CSRC is a unique example in our industry.

For the past four years it has proven that when good ideas are shared … great things can happen.

This is Steve … and Steve Jr. …articulated pedestrian mannequins …developed in collaboration between CSRC, Indiana University, and Purdue University at Indianapolis.

The mannequins simulate the different shapes, sizes and movement of humans to test electronic pre-collision systems that are designed to avoid them.

The program has spun off a separate company to manufacture the mannequins.

That's because "Steve" was recently acknowledged by the Society of Automotive Engineers as the baseline for *standardized test protocol.*

What that means is that Steve is a tool that is now available to ALL automakers to use in their pre-collision R&D that will help protect people in crashes or prevent collisions
from happening in the first place.

I bring this up because our 20-year investment in Hydrogen fuel cell R&D has been completely in house proprietary and enormous.

But … so have the rewards.

Our experience and knowledge in Hydrogen fuel cells run deep.

Our intellectual properties … our IP … are numerous.

As of today … Toyota solely owns approximately 5,680 Hydrogen-fuel-cell-related global patents …… some still pending.

But for all we have accomplished over that more than two decades of R&D we are really only at the starting gate with consumers.

That's why I am happy and proud to announce that Toyota will grant … royalty-free use of *ALL* 5,680…of its solely owned fuel cell patents including pending applications.

Toyota will allow the use of these patents by companies manufacturing and selling fuel cell vehicles through the initial market introduction period which is anticipated to continue through 2020.

This initiative will include patents that are critical to the development and production of fuel cell vehicles.

Approximately 1,970 licenses are related to the fuel cell stack about 290 to the high-pressure hydrogen tank and about 3,350 to fuel cell system control technology.

Here's the best part because it focuses on the rapid expansion of hydrogen fueling station networks.

Toyota will provide for the first time ever royalty-free use of approximately 70 hydrogen-station-related patents … indefinitely …for those installing and operating hydrogen refueling stations.

So what do 5,680 patents look like?

What's it all mean and why is this important to future car buyers?

Our "powerhouse" demonstration today is one good way to illustrate.

Starting any vehicle in the winter in Yellowknife Canada at a minus 30 degrees centigrade is a major achievement.

For a long time it was a vexing challenge for our fuel cell engineers.

The solution came from numerous software and hardware patents …working in concert in a unique voltage boost converter system.

Not only does the boost converter enable frigid cold starting …it also allowed engineers to reduce the size, weight, and cost of the fuel cell stack.

Natural disasters come in many forms.

In recent years… significant climate changes have caused massive, violent and record low temperatures for sustained periods.

Getting to work every morning in the dead of winter is one thing living through a power outage for days on-end is quite another.

The patents used to enable the Mirai's cold starting capabilities along with many patents yet to be used are

merely a first chapter.

Hopefully by sharing these patents with others new fuel cell components and systems can be refined and improved to increase performance, reduce costs,and attract a much broader market of buyers.

We are researching and developing cars that may one day drive themselves.

How do we prepare society for that? And how do we get to that point … safely?

Today's announcement on patents has less to do with the hydrogen fuel cell car than it does about the cultural growth of a hydrogen society.

Traditionally intellectual properties are fiercely guarded because they have great monetary value.

But with programs like the CSRC's "Steve" and our patent announcement today it's obvious that there can be a higher societal value in openly sharing IP.

By eliminating traditional corporate boundaries we can speed the metabolism of R&D … and move into the future of mobility quicker, more effectively, and more economically.

It is indeed a turning point in automotive history.

I will close with a quote that captures this idea from President Abraham Lincoln …

"The best way to predict the future … is to create it."

And that's what we are doing at Toyota.

I am indebted to President Lincoln, Henry Ford, Thomas Edison, Yogi Berra …
and of course Dr. Michio Kaku for their inspiring words on the future.

Again … thank you all for coming.

I hope you enjoy the show tomorrow.

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