

KEYNOTE ADDRESS: EVS 23 Closing Plenary Session

EVS 23 in Anaheim, CA (<http://www.electricdrive.org/evs23/>)
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December 5, 2007

Thank you. I am excited to be here today and truly appreciate this opportunity to give you insight into the goals and vision of the Automotive X PRIZE, a competition under development by the X PRIZE Foundation. I'd like to start with a brief look at the history of prizes, and then I'll give you more detail about the Automotive X PRIZE. In 1919, hotel magnate Raymond Orteig offered a \$25,000 prize to the first person who could fly non-stop from New York to Paris. In 1927, 25 year old underdog Charles Lindbergh won the prize. The Orteig Prize stimulated not one, but nine different attempts to cross the Atlantic. These nine teams spent \$400,000 trying to win the \$25,000 purse. By taking a smaller, faster approach to aviation, Lindbergh and the Spirit of St. Louis Organization showed that a small team of visionaries could outperform large government or corporate efforts. Prior to his flight, the press of the day characterized him as a daredevil and an amateur - "the flying fool." After he won the prize, a quarter of all Americans personally saw Lindbergh and the Spirit of St. Louis within a year of his flight - and the world changed with their excitement.

In 1994, Dr. Peter Diamandis read Lindbergh's book, "The Spirit of St. Louis." He came to believe that focused and talented teams in pursuit of a prize can change the world. In 1996, the X PRIZE was announced and was later named the Ansari X PRIZE in honor of the generous financial backing of the Ansari family. The \$10 million dollar prize inspired 26 teams from 7 countries to spend more than \$100 million dollars to meet the goal: to send a 3-person reusable spaceship to 100 kilometer altitude twice in 2 weeks. The prize was won in 2004 by Burt Rutan's SpaceShipOne, backed by Paul Allen. SpaceShipOne now hangs in the Smithsonian next to the Spirit of St. Louis, Richard Branson bought the SpaceShipOne technology for Virgin Galactic, and the personal spaceflight industry has taken off, with multiple companies vying to be the first to shuttle private passengers to space.

The Ansari X PRIZE resulted in a massive amount of media exposure for the teams and the X PRIZE foundation. The winning of the prize in 2004 was the second biggest news story that year.

These two examples of the Orteig prize and the Ansari X PRIZE give insight into why X PRIZES work. In addition to a cash purse, X PRIZES create an intense media spotlight that makes heroes out of the competing teams and that draws public attention to the issue at hand. They inspire unlikely participants from around the world to create radical breakthroughs, avoiding the bureaucracy and natural fear of risk often found within government and large industries.

In the wake of the success of the Ansari X PRIZE, the board of the X PRIZE foundation was joined by luminary individuals such as Larry Page of Google and Craig Venter of genomics fame. The board encouraged Peter to expand the goals of the X PRIZE Foundation beyond space and to use prizes to bring about breakthroughs for the benefit of humanity: revolution through competition.

Today the X PRIZE Foundation is focused on creating prizes in four areas: Energy & the Environment, Education & Entrepreneurship, Health, and Exploration. The Foundation is currently offering over \$40 million dollars in prize money including the recently announced \$30 million dollar Google Lunar X PRIZE for the first private team to land on the moon and the \$10 million dollar Archon X PRIZE for Genomics and preventative healthcare. You can learn more about the foundation's broader efforts at xprize.org. At this point, I'd like to dig deeper into the goals and vision of the Automotive X PRIZE.

The X PRIZE Foundation has been developing the Automotive X PRIZE over the last year and a half. The goal of the Automotive X PRIZE is to inspire a new generation of viable, super-efficient vehicles that help break our addiction to oil and stem the effects of climate change. Those two goals have guided our development of this prize. Teams from

around the world will create clean, production-capable vehicles that achieve at least 100 miles per gallon or its equivalent. Those vehicles will compete in dramatic stage races for the multi-million dollar prize.

I would like to point out a couple of key words here. First of all, “viable” and “production-capable” – we are looking for real cars that people want to buy – not science projects or concept cars. Teams will have to provide convincing and credible evidence to industry experts that their vehicles can be made affordably in quantity, that their vehicles are safe, and that they are backed by a believable business plan. Another term I’d like to highlight is “miles per gallon equivalent” (MPGe) – this is a technology-neutral competition. I know this audience has gathered together this week to discuss the future and benefits of electric transportation. We are well aware of the great potential of electric vehicles and expect them to do well in this competition. That said, all fuel types and drivetrains are welcome, assuming the teams can prove that their vehicles can be supported in quantity within our current fuel and energy infrastructure. I’ll say more later about how we intend to compare various fuels and drivetrains when calculating MPGe.

Our team of four within the X PRIZE Foundation has led the development of the Automotive X PRIZE competition. We are all entrepreneurs with experience starting and running new companies. None of us has prior experience in the auto industry. That was intentional and has proven to be a benefit. Over the last year and a half we have spoken to hundreds and now surely more than a thousand individuals at all levels inside and around the auto industry, and we have been able to approach those conversations with a fresh viewpoint and neutral opinions. During that outreach, we have talked to experts within car manufacturers, auto suppliers, industry critics, environmental NGOs, state and federal agencies, politicians and regulators, pollsters and marketing gurus...we have heard from all facets of the industry. Our official advisory board contains representatives from all of those groups and more, and is representative of hundreds of other unofficial advisors. All of these individuals have given freely of their time and knowledge to make our competition guidelines as informed and effective as possible. Without effective and specific rules, prizes fail and unintended consequences occur.

In addition to one-on-one conversations, we have held a series of large and small brainstorm sessions and working groups to discuss key aspects of our rules, starting with a 2006 rules brainstorm where debates were passionate but productive and where we were pleased to hear seasoned experts from large auto manufacturers declare that they had found points of agreement with representatives from environmental NGOs for perhaps the first time in their careers.

Earlier this year we held a working group on our energy and emissions figures of merit. The group of world-class experts in attendance reviewed and debated our energy efficiency calculations and equivalency tables as well as our emissions standards. These standards and calculations are critical elements of the prize’s credibility. Our proposed approach has been well received.

Our research and the results of the working groups led to the release of our draft guidelines for public comment in April at the New York Auto Show. We received many thoughtful comments on those guidelines and are currently reviewing proposed additions and changes with our advisors as we finalize the rules of the competition. The draft guidelines can be reviewed in detail at our website, auto.xprize.org.

The competition is based on two vehicle classes. The mainstream class is targeted at the center of today’s car market. We are looking for standard 4-wheeled vehicles that seat 4 or more passengers in that class, and expect to see vehicles ranging from sedans to small SUVs. The alternative class is intended to push consumers’ ideas of what a car is forward, addressing the needs of consumers while encouraging the public, especially commuters, to take a fresh look their vehicle choices. The requirements of that class focus on smaller vehicles with 2 or more passengers and 3 or more wheels, with reduced performance and range requirements. The emphasis of the competition is on the mainstream class, with the prize purse being awarded 3:1 mainstream to alternative.

Vehicles will have to meet rigorous fuel economy standards of 100 miles per gallon or its equivalent...MPGe – by which we mean pump to wheels energy efficiency in terms of petroleum-based gasoline miles per gallon. Fuels will be compared based on energy equivalency. In addition, there is a limit of 200 g/mi of greenhouse gas emissions on a wells-to-wheel basis including contribution from fuel extraction, production, distribution and consumption. There are also limits on greenhouse gas emissions from vehicle production as well as a limit on criteria emissions.

To win the Automotive X PRIZE, teams will need to qualify via a rigorous review process that will look at safety, features, cost, and business plan. Qualified vehicles will compete in a dramatic and long distance stage race series. If the vehicles meet our minimum requirements for fuel economy and emissions both in the race series and in independent lab testing, the cars with the fastest overall time in each class will win the prize purse. In the end, this is a race that needs to be interesting and exciting for the public to follow.

As I mentioned, we released our draft guidelines for public comment earlier this year. At the same time we opened our letter of intent program, allowing teams to officially declare their desire and intention to compete. We plan to formally sound the starting gun launching this competition and announcing the amount of our prize purse in early 2008, likely at a major auto show. At that point we will announce a deadline for team sign-ups. Throughout 2008, teams will submit business plans and vehicle designs to our expert judges for a review of safety, cost, features and feasibility. Qualified vehicles will then compete in a dramatic race series with a qualifying race in 2009 and a grand prize final race in 2010. These race events will be hosted in major media markets coast-to-coast, and the races themselves will reflect real-world driving behavior, with a variety of stages including long distance, commuting, hill climb, and more. We expect broad media and consumer attention to be focused on these races. Teams that meet our minimum 100 MPGe and emissions requirements will become official Automotive X PRIZE Qualified vehicles and can expect significant attention from consumers and the media. Of those qualified vehicles, the cars in each class with the lowest overall time will be awarded the Automotive X PRIZE. At the end of 2010, we will be celebrating a new generation of super-efficient vehicles...cars that are not only super-efficient but also desirable and proven to perform.

So who do we expect to enter this competition? We welcome all brave and innovative teams from around the world, ranging from large auto manufacturers to small start-ups and inventors. We have been in contact with executives and ad hoc committees at most major auto manufacturers. They are all are considering entry. We have seen increased pressure from the media asking the question, "Why aren't the OEMs competing?"

We do know there is extensive interest from small teams and startups around the globe...visionary individuals who believe they can change the world. We have received thousands of inquiries to date. In April, we announced our letter of intent program allowing teams to begin putting down deposits and signing official letters signaling their commitment to enter this competition.

As of today, 47 teams from 7 countries have signed a letter of intent.

The 47 teams range from well-funded small car makers with industry experience to as-yet unknown startups to college teams and even a high school team. None of these teams have gone through our qualification yet, but this enthusiastic response is early evidence of the power of this prize. Already, business plans are being drawn up, investments are being made, sponsorships are being signed, teams are being formed, designs are underway and change is beginning. These early teams are brave and bold, and we expect them to be joined by more teams over the coming months. I encourage those of you who are qualified to enter to consider joining, just as I encourage those of you with large auto manufacturers to push for their entry into this race as well.

By now you have a sense of the ambitious scope of this prize. To create and run this global competition we will lean on the support and contributions of many people and organizations. We have built strong relationships with multiple government agencies including the US DOE, US EPA, US DOT (NHTSA and FHWA) and CARB, and each have stated their support and enthusiasm for our efforts. They are contributing data and staff time to the

development of our rules. These agencies will also be integral to our testing of the vehicles' fuel economy, emissions and safety. Many other organizations including the NRDC, the Sierra Club, the National Wildlife Federation, the Consumer Federation of America and others have also endorsed this competition and contributed to our draft guidelines. They will be important contributors to our education and outreach programs throughout the competition. I offer our thanks to each of these groups for their work.

As I mentioned, media coverage and public interest is a critical component of all X PRIZES. Although we have not yet officially launched the Automotive X PRIZE, we have already received a tremendous amount of interest from and coverage by the media. This prize revolves around topics of high interest to the global public: cars, our fuel future, and our planet's health. We expect this intense media interest to be a significant motivator for our teams as well as our partners and sponsors. The Automotive X PRIZE will shine an intense spotlight on the issues facing today's automotive industry, from oil addiction and climate change to consumer education on how driving behavior, vehicle safety, and vehicle performance affect the efficiency of our cars.

In summary, the Automotive X PRIZE will usher in a new generation of super-efficient vehicles...100 mile per gallon equivalent vehicles that are real cars that people want to buy. We look forward with great excitement to seeing the results of this race in 2010, and to these cars reaching the hands of consumers shortly thereafter. We believe this breakthrough is desperately needed, and we believe it is achievable in the short term. We want all of you to be involved. Enter a team into this race or share your expertise with a team. Encourage your organization to sponsor the prize or a team. Tell your home city or state that they should host one of the legs of the races. Watch the race events with your families so that your kids understand that when they buy their first car they should demand a car that is cool AND super-efficient too. Go to auto.xprize.org and give us your comments on our rules. Be a part of this competition and of the solution. Thank you very much.