Learnings from Station Development

H2@Scale Workshop

November 16, 2016
Current Status

The True Zero Hydrogen Network has performed over 14,000 fills and dispensed over 40,000 kg of hydrogen (15 Open stations)
• On track for another 2,500 fills and 8,000 kgs in November
What’s Next?

October 2015 – Only 2 Open retail hydrogen stations
• 0 Toyota Mirai’s in California

November 2016 – 23 Open retail hydrogen stations (15 True Zero)
• >900 Toyota Mirai’s in California (source: Automotive News)

November 2017 – ??
Open retail hydrogen stations (19 True Zero)
• 5,000-6,000 FCVs in California (source: CARB)
What’s Next?

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• 0 Toyota Mirai’s in California

November 2016 – 23 Open retail hydrogen stations (15 True Zero)
• >900 Toyota Mirai’s in California (source: Automotive News)

If ARB projections are correct, True Zero will be at capacity by the end of 2017
Hydrogen Supply

U.S. hydrogen production capacity currently 30,000,000 kg/day
- 68% associated with petroleum refining
- 21% used for ammonia production

For example, there are approximately 450,000 kgs/day capacity in SoCal
- But, how much is not already dedicated to existing customers?
- Assuming 5% excess capacity (22,500 kgs/day)
  - Supply will be exhausted by 2022

Key questions:
1) Where will the additional gas come from?
2) How much excess supply is in NorCal?
Conclusions

1. California needs large stations for FCV projections to stay on track
2. California needs dedicated hydrogen fuel supply for FCV projections to stay on track