California Energy Commission
DOCKETED
12-HYD-01
TN # 66084
JULY 02 2012

Toyota's Image for Hydrogen Infrastructure in California

June 22, 2012

Toyota Motor Engineering &
Manufacturing North America, Inc.

Challenges and Next Steps for Fuel Cell Vehicles

Achievable challenges

- Cruising range： approx. 800 km
- hydrogen refueling time： approx. 3 min
- Low-temperature starting： -30℃

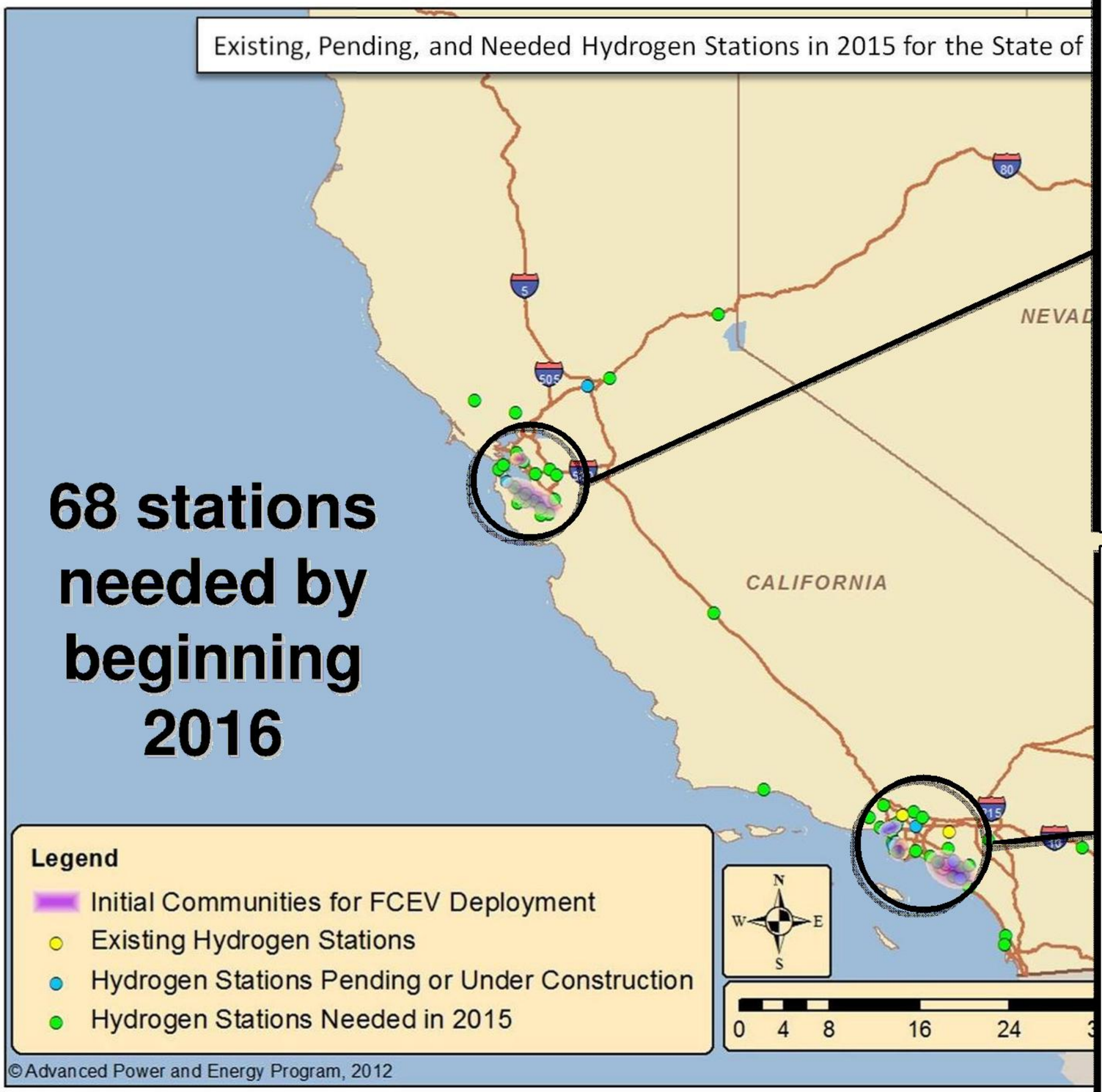
Exhibit in Tokyo Motor Show 2011 “FCV-R”

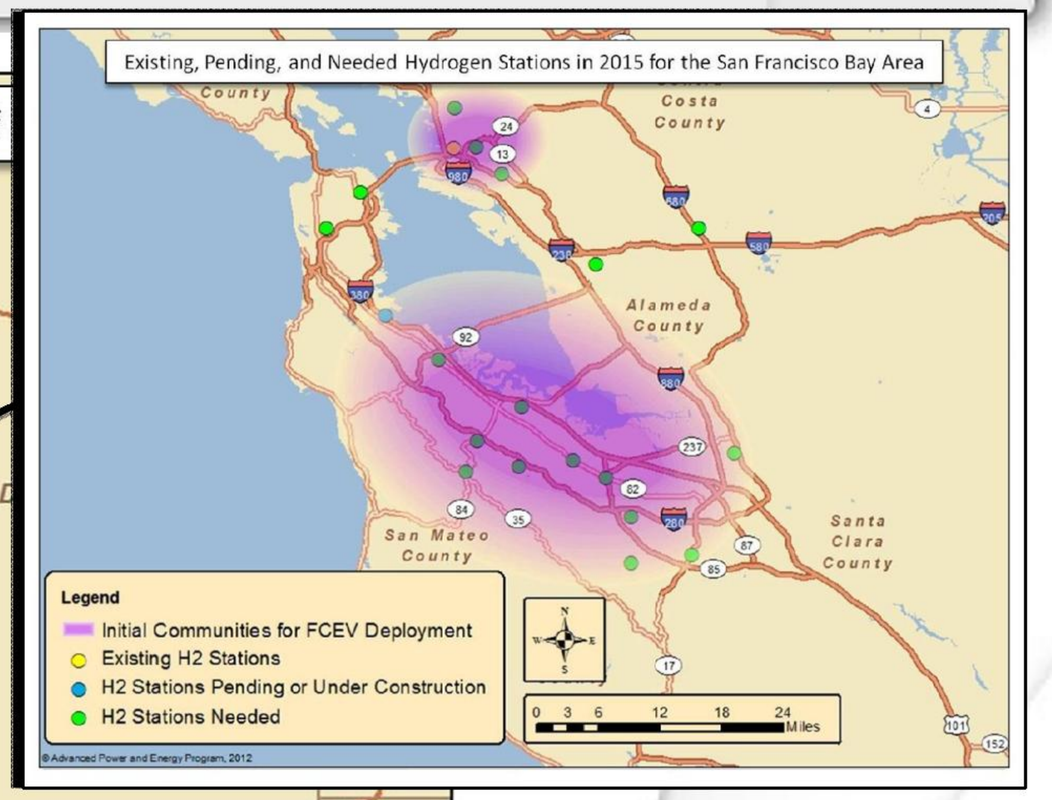
Remaining challenges

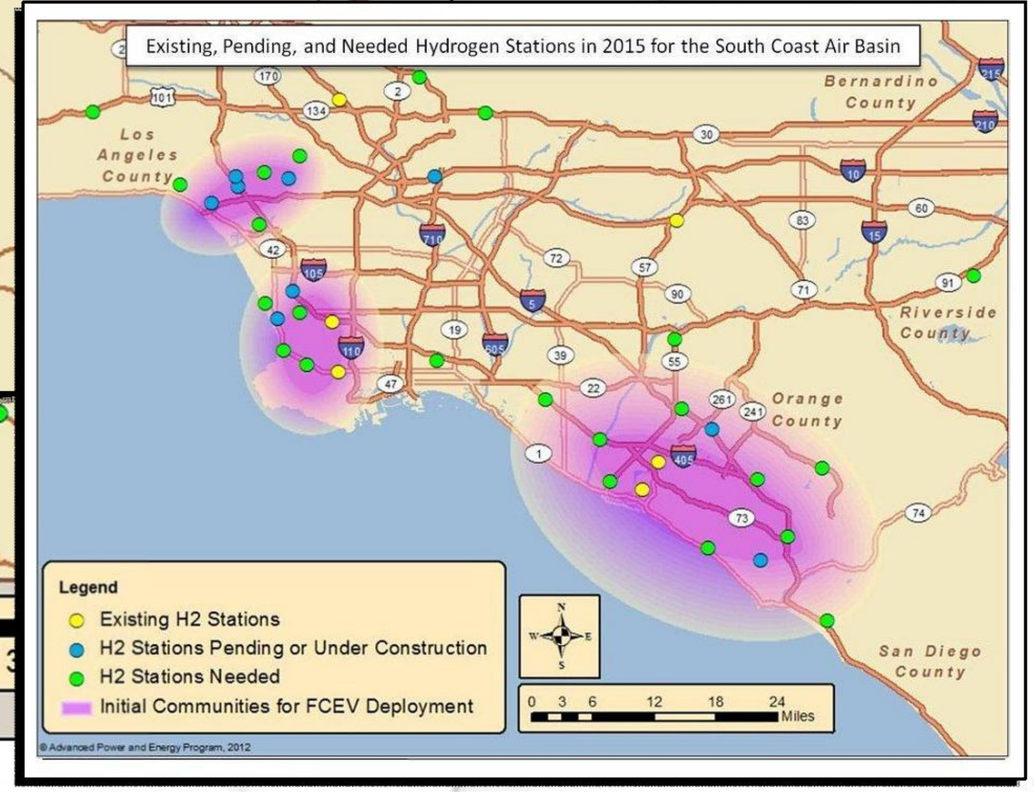
- Cost reduction
- Smaller and lighter vehicle
- FC stack durability improvement

Start commercial launch of sedan type FCV around 2015

CaFCP Hydrogen Infrastructure Road Map







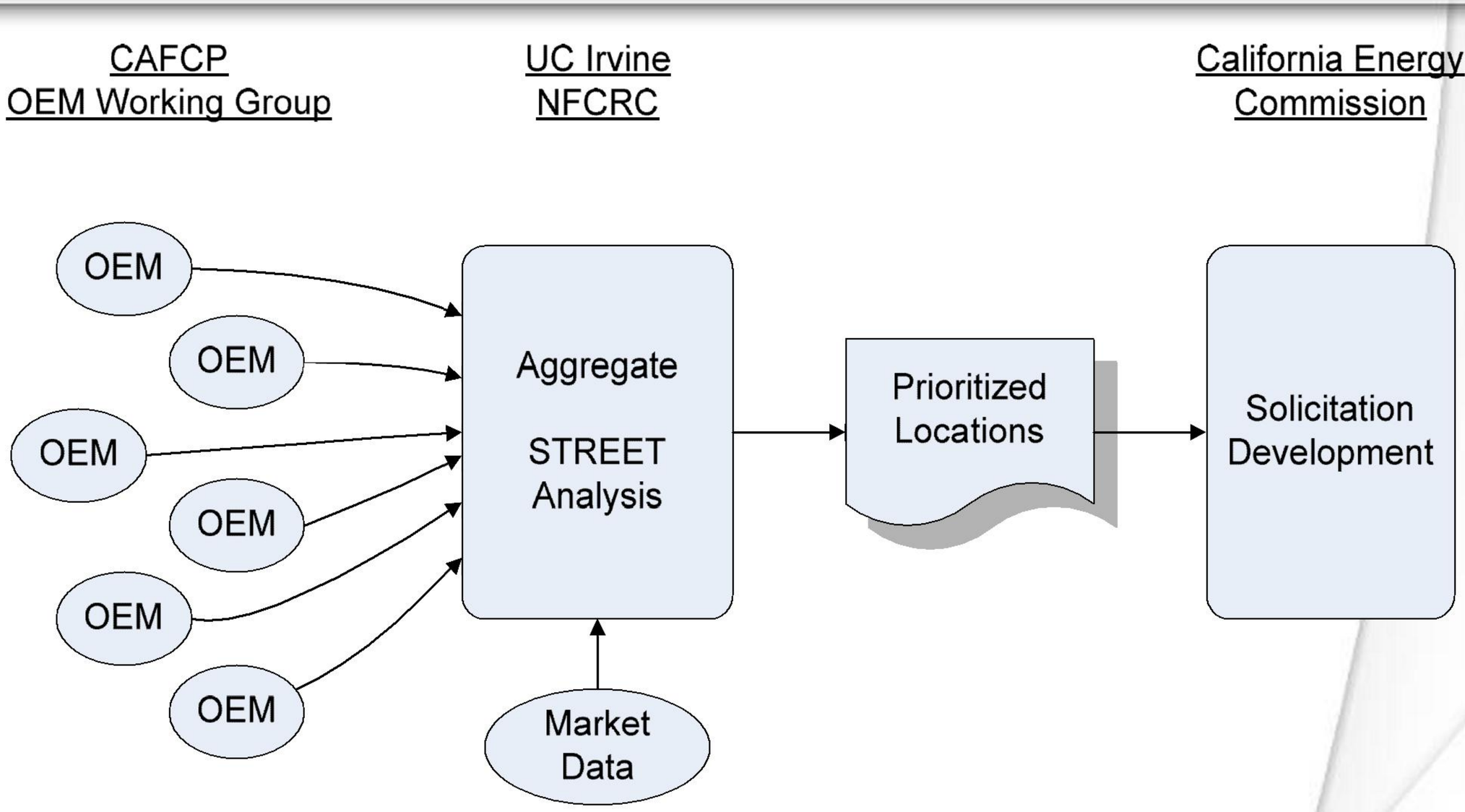
Station Performance & Access

<u>Experience must be consistent with conventional vehicles</u>

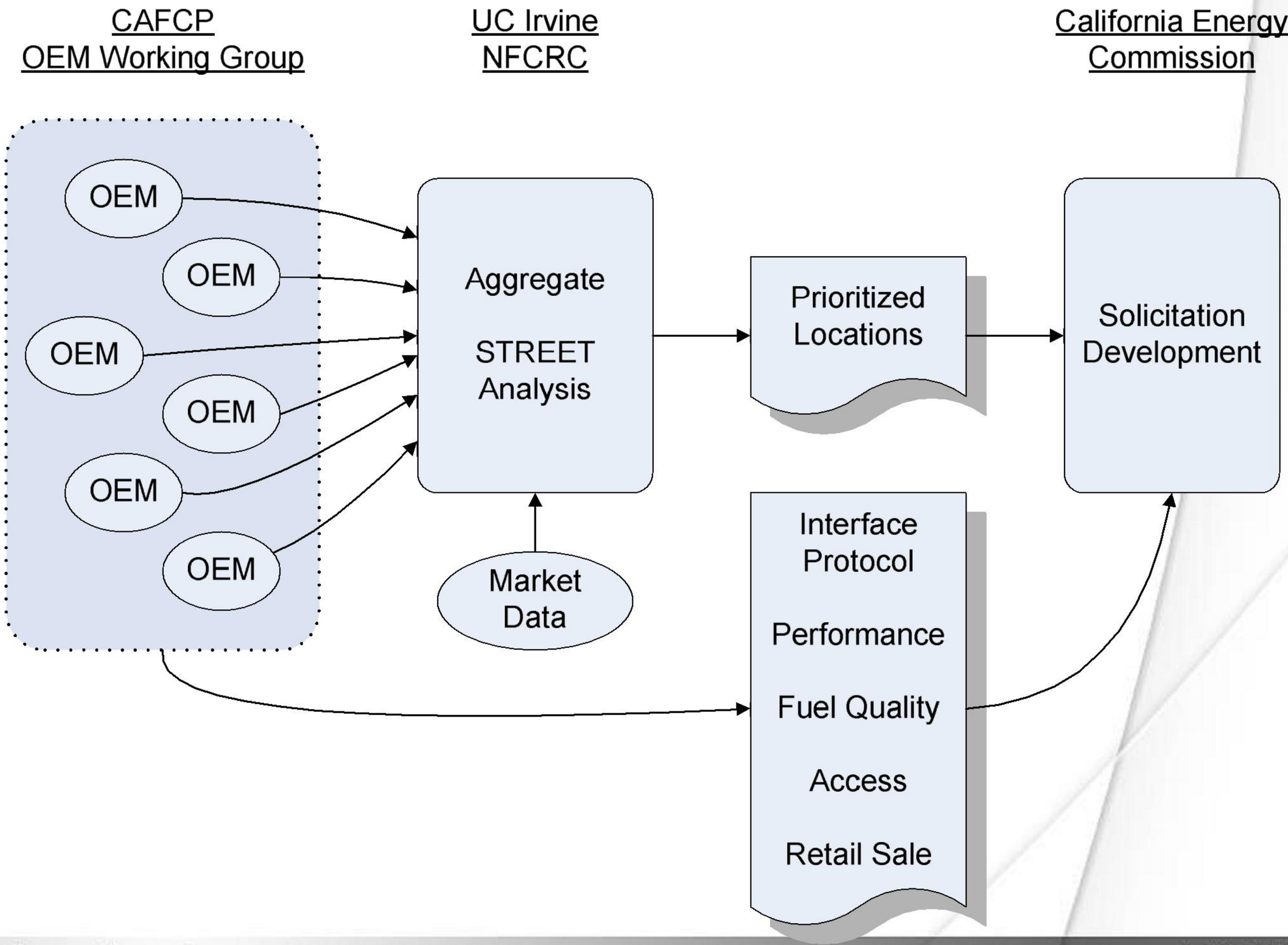
- SAE J2601 interface compliance
  - » H70 Type A (-40C precool for ~3 min fill time) & H35
- SAE J2719 fuel quality compliance
- Scalable to 500 kg/day average daily capacity*
- Peak consecutive fill rate of 12 vehicles in 1 hour (~84 kg)*
- Simultaneous fill capability where each dispensing nozzle (35 or 70MPa) is controlled by a dedicated user interface
- Retail point of sale transaction
- No access agreements or user contracts

**Primary cluster stations; may or may not apply to connector or destination stations*

Proposed Image – Process to Prioritize Locations



Proposed Image – Process to Define Station Criteria



Thank You

Exhibited at
Tokyo Motor Show 2011