**Notes from 4/14/2021 Incentives and Financing WG meeting**

* Review challenges and opportunities identified March 2
  + Are there additional challenges and opportunities beyond what we’ve already identified?
    - See updated 3.2.2021 document for all
    - See categorized challenges/opportunities below

**Categories for WG discussion**

End user financing and incentives

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| **Challenges** | **Opportunities** |
| Cost of EVs |  |
| Free rider challenges (incentives / subsides) – hard to identify marginal consumer |  |
| How to appropriately target the incentives to get intended results |  |
| Lack of state make-ready ordinance (it costs more money to retrofit later). Is make-ready the right incentive? And/or utility owned/operating (financing)? |  |
| Education and outreach has to accompany the financing/incentive (e.g. rural areas) |  |
| Lack of strong political will for tax incentives for EVs | * Retain wealth in state ($ for gas and diesel leave state). Shift to in-state generated renewable energy. |
| Need financing/incentives for medium and heavy duty (see SC Logistics fact sheet) | * Monetize federal tax credit for public entities (city/local governments can buy off of contracts and get fed tax credit) |
| Need incentives for heavy duty charging (different requirements than light duty) |  |

Equitable and accessible investment

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| **Challenges** | **Opportunities** |
| Upfront cost and availability of financing for low-income (inadequate credit, can’t get loan) | * Special financing programs for low-income (especially used vehicles) |
| From early adopters to mass market uptake - how will financing needs change? |  |
| EVs might not be desirable to everyone (or they might not believe it should be incented/subsidized) |  |
| Lack of incentives for LMI communities |  |

Understanding the economic impact (consumers, dealers, manufacturers)

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| **Challenges** | **Opportunities** |
| Return on investment (DCFC especially). Upfront cost of charger, costs associated with utility bill structure (demand charge) – how do you talk about, how do you overcome this conversation? | * Save taxpayer dollars with lower cost transit/school bus operation * Resilience component (use EVs to power hospitals and shelters) |
| Lack of understanding of how EVs operate differently (in some cases more simply) |  |
| Difficult to quantify benefits (environmental, public health). | * National Air Quality standards need to be complied with (can EVs be a more cost-effective way to do this?) * Bring forth other benefits (public health, fewer sick days) – partner with American Lung Association? |
| Dealers – car availability, no incentive to sell EVs (small margins), dealers aren’t trained  Service centers – less maintenance for EVs means less profit) | * Bring auto dealers / service stations / others along in this transition (proactively) to help them think through new business models to overcome potential losses (Make Your Car GO industry – We’re in the refueling business) |
| Sprawl issues – are you incentivizing sprawl (or not discouraging it) |  |
| Rebound effect – does making it cheaper to drive = drive more? |  |
| Recycling – understanding the full life cycle cost of manufacturing source materials (or opportunity?) | * Lifecycle benefits (power grid while on road, use batteries for storage in second life, recycle batteries at end of life) |
| There are not a lot of EV cars on the lot (available for a test drive). Also lack of model availability |  |
| Logistic decisions currently made based on fuel price – electrification reduces this ability | * Help companies and suppliers meet their sustainability goals |

Regulatory and policy considerations

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| **Challenges** | **Opportunities** |
| Tension between market forces and utility financing/incentives (rate-basing) – how involved should utilities be in this? | * Make more efficient use of the grid – rate design / technology (Southern’s night time charging rate) * Vehicle to grid opportunities |
| Concern for free market if there are subsidies through utility incentives (compare to fuel stations) | * Increase load for electric utilities (downward pressure on rates) and create opportunity for deeper investment in clean energy (maximize benefits of TE) |
| Tesla is not allowed to operate in SC – includes other dealers and service centers |  |
| Need ability for direct sales and service to encourage manufacturers in state – who will lead this effort? |  |

Other considerations (other groups)?

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| **Challenges** | **Opportunities** |
| Availability of charging infrastructure (being able to find a station) |  |
| Time it takes to recharge on highway |  |
| Line extension policies |  |
| Is battery technology still a barrier (in rural areas specifically)? Range challenges |  |
| Registration is difficult (Tesla example – must go to CA to get titled/registered) |  |
| Petroleum industry views EVs as competition and some want to see it fail. |  |
| Tension between electrification and vehicle miles traveled reduction |  |
| Range anxiety |  |

* Identify research and best practices
  + What research has already been done?
    - Calstart
    - Dr. Sheldon’s studies (equitably distributed incentives)
    - Greenlining
    - Regional studies are better if we can find them
    - Virginia research
    - Colorado / Minnesota
    - Driving PA Forward
    - MA / NJ / NY Reviews
    - Find something more rural
    - TN/FL EV roadmaps and incentive programs
    - What is disincentivizing EVs (registration fees in GA/drop in tax credit)?
  + What additional research is needed to fully understand the topic, and who will do it?
    - Studies on adapting to growth (where were you at 1%, where are you at 5% penetration)
  + What models from other states can help us address anticipated barriers?
* Discuss remaining information gathering
  + Which populations are of express concern with regard to this focus area? Does the group have representation of this population(s)? If not, who can be invited to provide this critical perspective and input?
    - Rural communities
    - Dealers / manufacturers
    - Employers (many rural customers charge at workplace)
    - Understand movement of freight (infrastructure and economic development) – 2 inland ports (start here?), logistics company, highways (85 seeing increase?) to warehouses (real world demonstration – 100/200 mile radius – what would need to adapt. Hub/spoke model to stops along the route
  + Who are the Subject Matter Experts (SMEs) we should reach out to for informational interviews that can help inform solutions?
    - Big fleet managers (UPS, FedEx, DHL)
    - Auto manufacturers (market growth, what’s needed to support the transition)? What are companies looking for in states as looking to expand and build out plants
    - Mark Johnson, Randy Collins
    - CU ICAR studies, C2M2, more broad academic institutions
    - Packard
    - TVA’s EV Initiative (look at replicating their model)
  + What overarching questions are presently unanswered, but will need to be answered over the next couple of months? How will the team set about answering these questions?
* Who is missing?
  + More community involvement (go to them)
  + Get with Michael Hildebrand
* Anything else?
* Next steps
  + Compile research and send to Stan/Jen
  + 2nd Wednesday at 2:00