Sustainable Financial Mechanisms and Innovative Business Models for Electric Vehicles in India

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Sustainable Finance – What is it?

• Sustainable finance = Any model which is independent of government support
  – **Profitable** & Market Based
  – Replicable/Scalable with minimum marginal cost
  – Creates a positive societal effect
India's Rapid Urbanization

- An Urban population of 600Mn people – To give it perspective, this is twice the size of the population of USA and almost equal to the population of Europe but using 1/8th the land area
- Creation of over 50 new cities with population of over 1Mn
- Young demographic – Increased consumption needs with higher mobility demand
India's Rapid Urbanization – An opportunity for sustainable finance

• Urbanization Infrastructure Spheres
  – Resources – Energy, Nourishment & Water
  – Physical – Mobility, Sanitation & Real Estate
  – Social – Security, Education, Recreation & Health
  – Financial – Banking, Credit and Investment
Financing Rapid Urbanization through Electric Mobility

• Areas Of Influence – Energy, Mobility, Health and Credit
• Creation of a financial product (Credit) which monetizes each of the areas of Energy, Mobility and Health.
Financing Rapid Urbanization through Electric Mobility

• Factors of E-mobility which allow for investment
  – Fixed OPEX cost
  – Long Lived Asset
  – Fixed & certain demand source for energy
  – Known positive carbon effects for carbon pricing
  – Secondary use of batteries to generate revenues in sister sector
Show me the money – Creating a Liquidity Sink

• **12 Years** of Low and **Negative global interest** rates coupled with QE have created trillions of dollars of liquidity looking to a stable market. Most of them with a green investment requirement

• Offer them a concept of a liquidity sink (modeled after thermodynamic concept of heat sink) to soak up their excess liquidity. Create a value creation machine fueled by India’s Rapid Urbanization

• Electric mobility addresses the problem of cost uncertainty and provides a platform for mobility, energy with social benefits
A New Paradigm to Finance Urbanization

Rapid Urbanization E-Credit

Low Uncertainty
- Fixed & Certain Opex

High Yield
- Large Demand Pool of Users
- Definitive Value addition
Low Uncertainty Factors

- Fixed & Known Cost: Energy, Capital and Maintenance
- Complimentary uses of already installed infrastructure
- After life value
- A Large Pool of Users Create Dependable Revenues
Yield Mechanics

1. User revenue from a large urban population
2. Revenue contribution from IPP

Isolated/pledged revenues

1. Capital Cost Service
2. OPEX Cost

Cash Flow

Liquidity Sink

Account for OPEX

Return to Investor
A New Approach - Lease finance

**Debt Finance**
- Asset ownership lies with the borrower
- Tax benefits accumulated by the borrower
- Term can be the entire economic life of the asset

**Lease Finance**
- Asset ownership/title is with a lessor. The borrower, aka the lessee is utilizing the asset
- Tax benefits claimed by the lessor
- Term cannot exceed over 85% of the economic life of the asset
Lease finance

Rent paid by lessee to lessor
Leveraged lease

- Lessor
- Lender
- Lessee

Rent paid by Lessee to Lender and excess to Lessor
Components of a lease structure

Part 1: Cost of asset
- Cost of Infrastructure
- Transaction costs

Part 2: Rent payments

Part 3: Cost of Energy & Maintenance

Part 4: Residual Value after lease term (optional)

Part 5: Discount Parts 2, 3, 4 back to Part 1
Financially Engineered Product

\[ PV = \sum_{k=0}^{n} \frac{1}{(1 + i)^n} cf^k \]
Result

- Financing of a new power grid
- Increased efficiency and profitability of IPP – can lower cost of industrial energy and thus increase industrial output
- Reduced mobility pressures
- Creation of a liquid credit market which can cater to MSMEs both as credit disbursement
Business Models

Spearheaded by Start-Ups with Incumbents adopting the Start-Up’s success stories
EVs Servicing the Shifting Market Dynamics

Consumer focus on convenience, experiences and unwillingness towards asset ownership is an ideal setting for the development of electric mobility

- Commercial mobility is now driven by e-commerce and delivery-based consumption
- Personal mobility driven by shared, connected and on-demand transport
Commercial Electric Mobility Growing

- First & Last Mile Delivery – Ecommerce delivery through electric SMC/LCV with charging capabilities at warehouses
- Last mile transit – Multimodal transit from metros and suburban rail to destination with stations as closed loop centers with charging infrastructure
- On demand transit – Migration of mass transit to service MaaS nature – Expansion of private players in the mass transit segment due to rapid urbanization and fixed cost of e-mobility
Factors Driving Adoption

- Lease finance replacing traditional vehicle finance
- Higher utility and uptime of the vehicular asset due to increased demand
- Traffic congestion resulting in frequent start stops make it ideal for commercial EVs to navigate the urban drive cycles
- Lower TCO
ELECTRIC VEHICLES & PERSONAL MOBILITY
Investing in Experiences

• Experience Vs Asset Ownership
  – Millennials are changing the way people look at asset ownership
    • India poised to become the youngest country with an average age of 29 by 2022 - Any market solution needs to be millennial centric to succeed in India
    • Experience, not ownership, will reduce the traditional secondary market for used vehicles – which is the bedrock of current auto finance
    • Commitment Phobic – New income earners are not willing to be tied down to long term asset ownership and accompanying debt repayments
Cost Conscious to Value Conscious

• Millennial consumers focus on daily trips; no range anxiety
• Willing to pay a higher cost for short term need rather than a long-term fixed asset such as a car
• Low Commitment Subscription model for self drive vehicles will appeal to most but only when included as part of a turn-key solution
The next 10,000,000 cars

- DESIGN MATTERS – Millennial driven market – Experience trumps functionality
- Short term (2-3 year term) subscriber driven market
- Recyclability of cars important in design of vehicles i.e. after 2-3 years the cars can be refurbished to be released to first time subscribers in next emerging city
- Co-ordinated effort with power producers, as they are a key beneficiary and partner
- Importance of connected vehicles: S&P 500 Energy Index valued at about $1.4Trillion; market cap of Amazon, Apple, Alphabet and Microsoft = $4.151Trillion.
Indian drive cycle advantage

• Old Chicken and Egg – Chargers vs EV Demand
  – Charging cycles very different from filling up at a gas station
  – Indian market is mostly the urban drive cycle – this allows for night-time charging with various energy as a service models
  – Large urban demand coupled with unique drive cycle allows the market to reach scale and drive infrastructure deployment and not the other way round
Conclusions

• With EVs arrival, markets will change dramatically

• Great Opportunity exists because of EV’s nature

• Will market leaders in this industry transform finance and usage methodology? Time will tell

• Legacy Players will have to become nimble to stay relevant
THANK YOU

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