



Plenary Session - II
**Energy Storage - The Future of
Electric Vehicles**

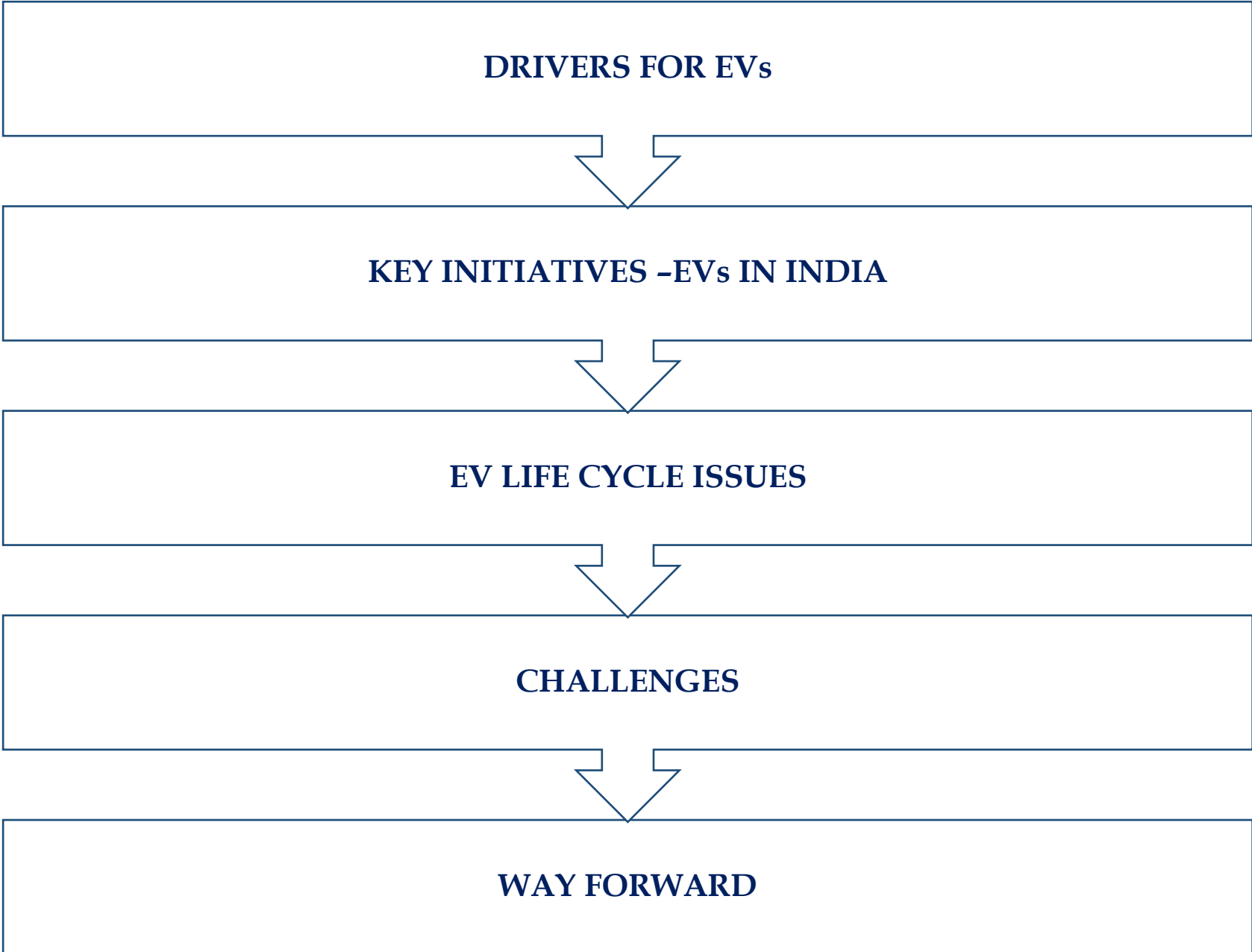
24th August 2022

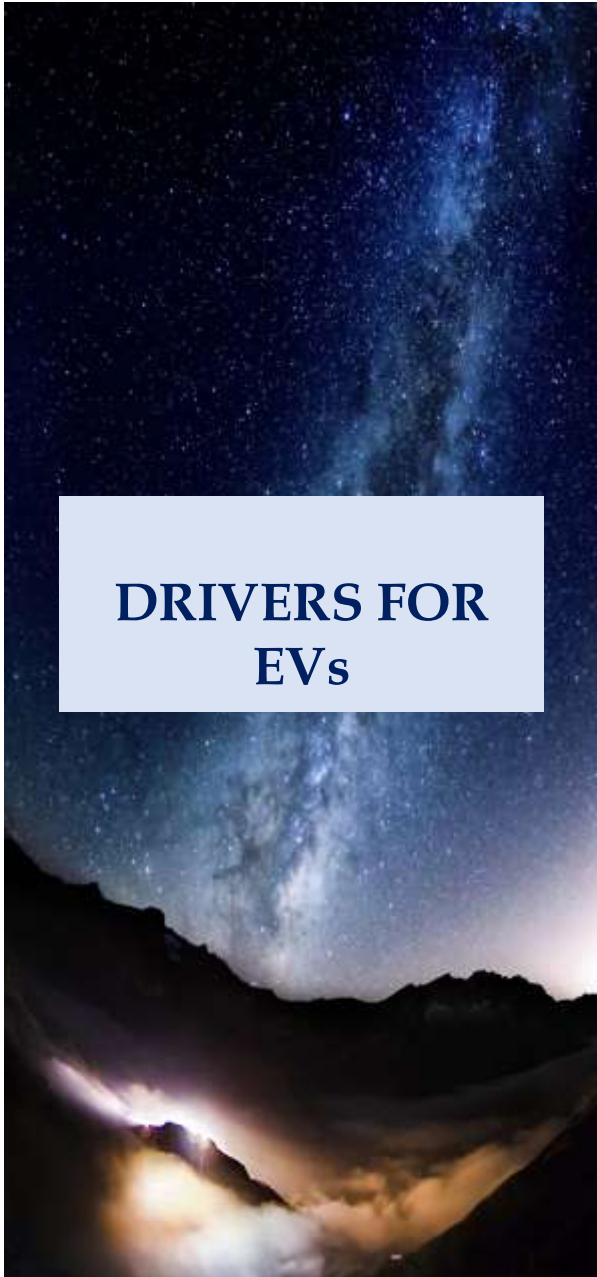
PRABJOT SINGH BHULLAR
ADVOCATE

**13TH WORLD RENEWABLE ENERGY
TECHNOLOGY CONGRESS**



OVERVIEW





**DRIVERS FOR
EVs**

INCREASING DEMAND OF ENERGY & TRANSPORT SECTORS



**ENERGY 'SELF-SUFFICIENCY'... CRITICAL FOR ECONOMIC & SOCIAL
DEVELOPMENT**



CONCERNS OVER ENERGY SECURITY - RISING FUEL PRICES



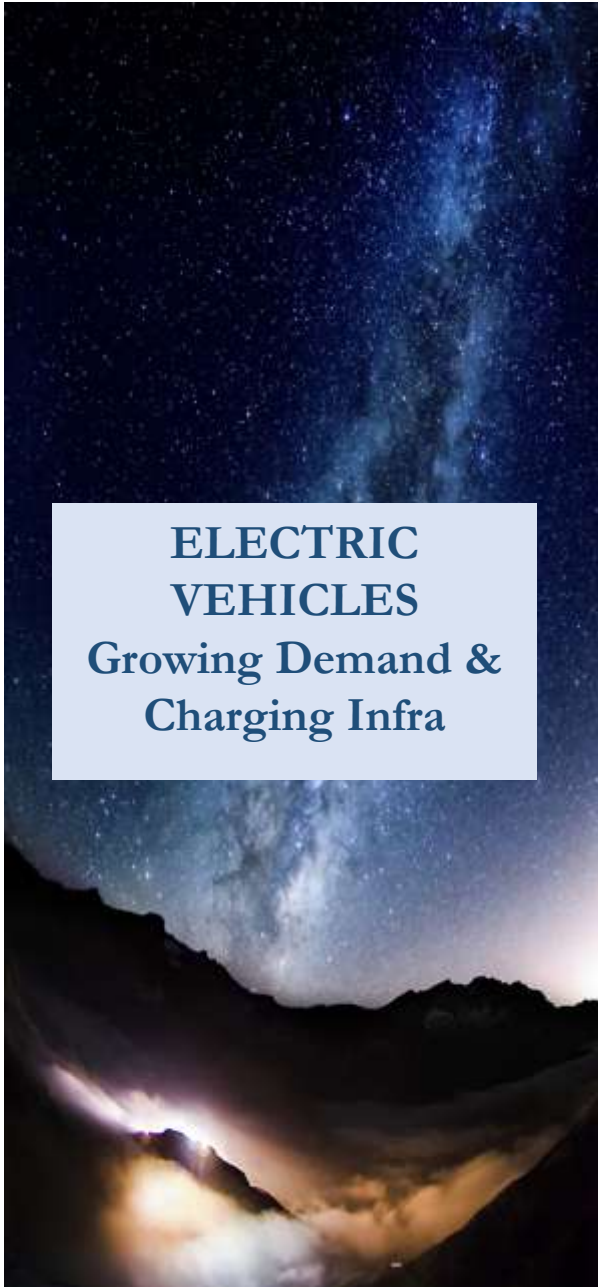
**ENSURE ENERGY SECURITY BY REDUCTION OF GHGS & ASSIST IN ACHIEVING
TARGETS UNDER COPS**



PROMOTING EV WOULD LEAD TO A POTENTIAL SAVINGS ON OIL IMPORT BILL



IDENTIFYING "SUSTAINABLE" ALTERNATIVES CRITICAL!



**ELECTRIC
VEHICLES**
Growing Demand &
Charging Infra

	2030 Vision	102 Million EVs 2.9 Million Public Chargers Jan 2022 – 9.13 lakhs
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	Charging Infrastructure Required	Highways Fuel Stations Commercial Places Residential
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	Upgradation of Available T&D Infra – Are Utilities EV Ready?	Most residences have loads of 5-7.5 KW Vehicles of future required 7 -22 KW
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GLOBALLY – 70% USERS CHARGE AT RESIDENCES



**ELECTRIC
STORAGE
Discom
Challenges !**

RPO & ENERGY STORAGE TRAJECTORY (2029-2030)

- Energy Storage Obligations
- 1% - 4%
- Calculated as % age of total consumption
- Treated as fulfilled when 85% of energy stored in storage systems is procured on annual basis from RE sources

Think tanks are predicting cumulative demand to grow to 600 GWh between 2021-2030

- EV - 380 GWh
- Grid Applications - 136.4 GWh
- Behind the meter - 46.5 GWh
- Consumer Electronics -36.4 GWh

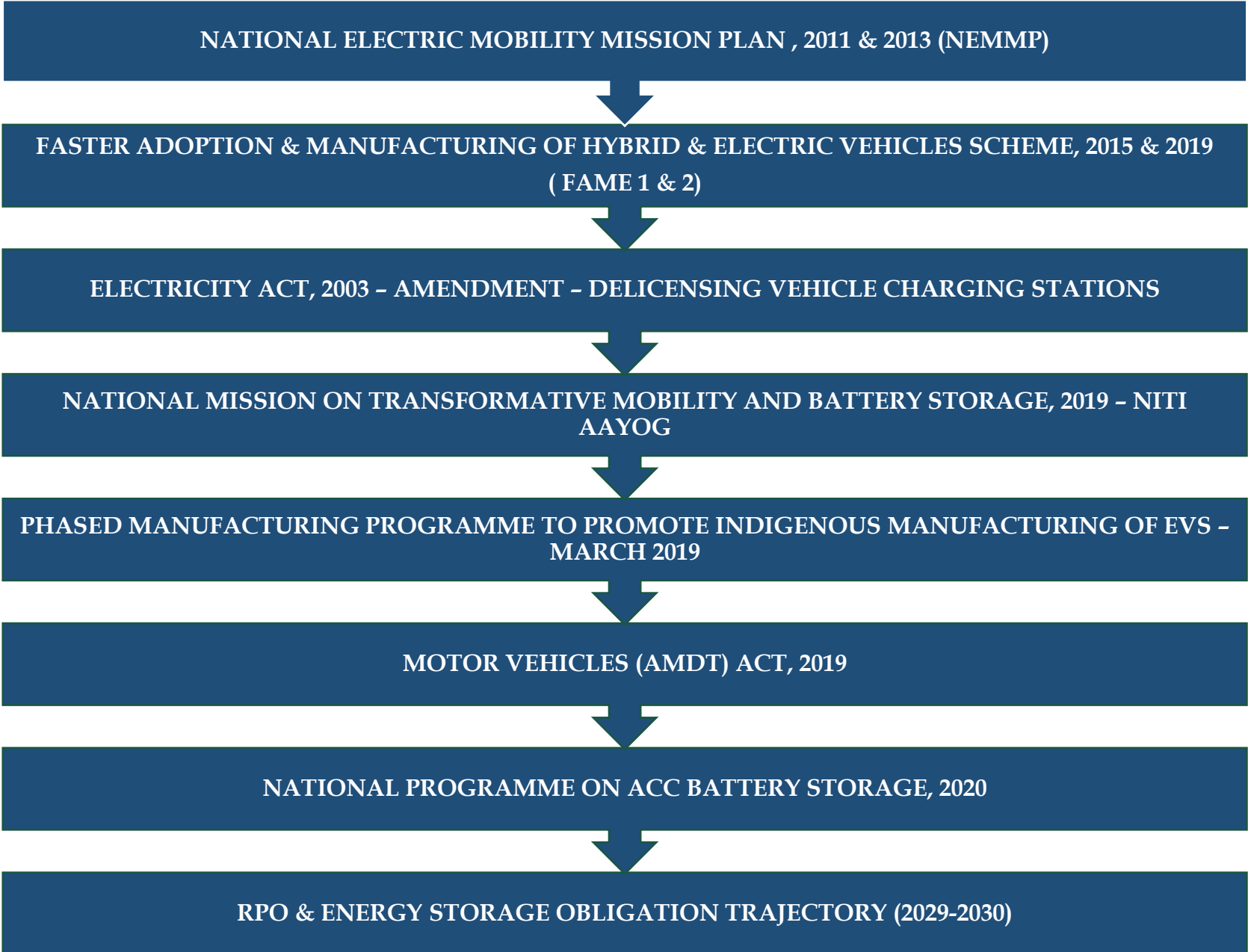


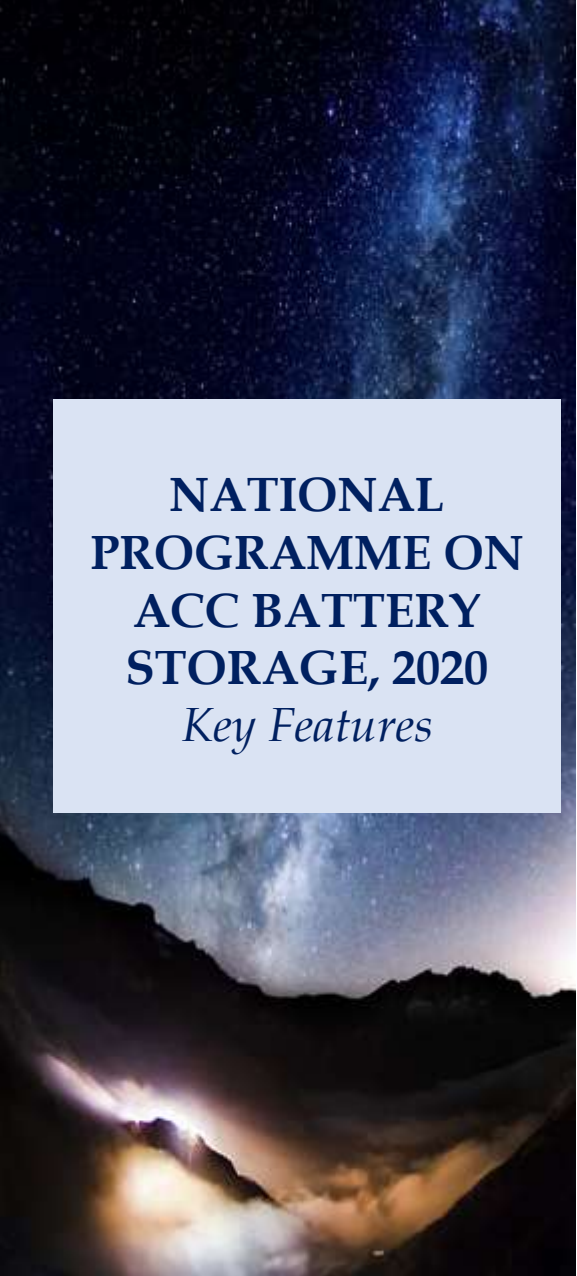
**INCENTIVE
REGIME IN
INDIA**

- **FASTER ADOPTION & MANUFACTURING OF HYBRID & ELECTRIC VEHICLES SCHEME, 2015 & 2019 (FAME 1 & 2)**
 - **FAME 1**
 - Reduced BCD and GST on EVs, its assemblies, parts
 - **FAME 2**
 - Demand incentives for demand generation of EV by reducing cost of acquisition of vehicles
 - Demand Incentives available to consumers in the form of upfront reduced purchase price of hybrid and Evs
 - Subsidy from Government to OEM
 - EVs to satisfy minimum technical eligibility criteria as regards performance & efficiency
 - Support for public charging infrastructure
- **NATIONAL MISSION ON TRANSFORMATIVE MOBILITY AND BATTERY STORAGE, 2019**
 - Propose & recommend policy guidelines and strategies for sustainable energy storage in India
 - Launch a Phased Manufacturing plan focusing on manufacture of cells, modules, battery packs
- **PHASED MANUFACTURING PROGRAMME TO PROMOTE INDIGENOUS MANUFACTURING OF EVS - MARCH 2019**
 - BCD reduced on parts and sub-parts of EVs, lithium ion cells, battery packs



**EVs
INITIATIVES
IN INDIA**





**NATIONAL
PROGRAMME ON
ACC BATTERY
STORAGE, 2020**
Key Features

Support 50 GWh of giga-scale ACC manufacturing facilities for meeting domestic demand

Incentive offered in the form of "Cash subsidy" on output linked with volumes of cells manufactured and sold by beneficiaries

Cells with high performance specifications (Energy Density & Life Cycle) are eligible to avail attract higher subsidies

Imposition of suitable BCD to promote phased manufacturing of ACCs & compenents

Manufacturers encouraged to invest in R&D for manufacture of cells in India

Private entities to be selected through a bidding process to set up manufacturing facilities for producing ACC

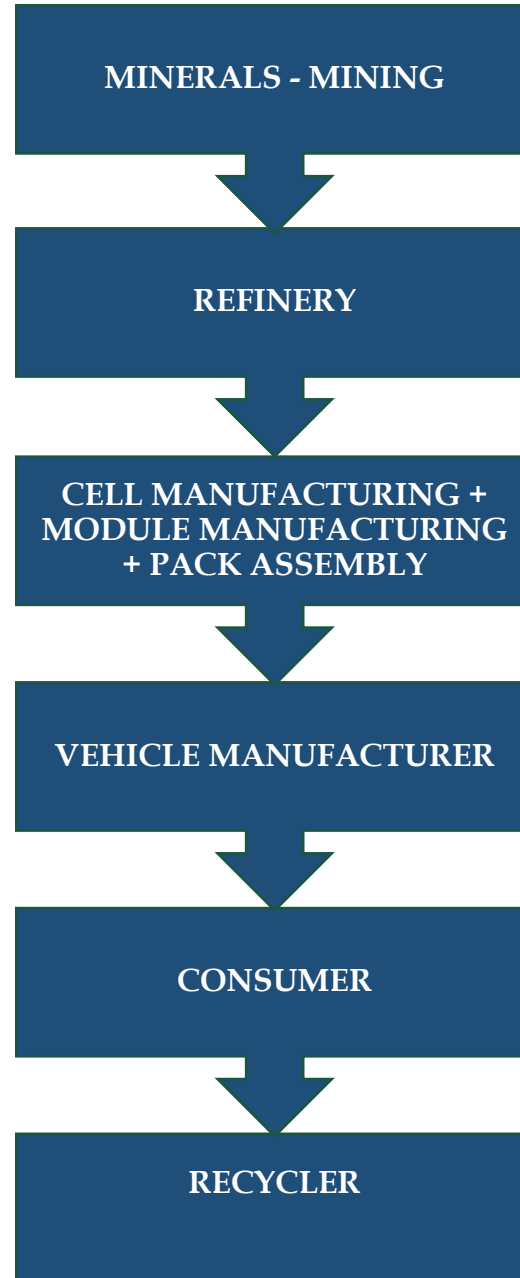
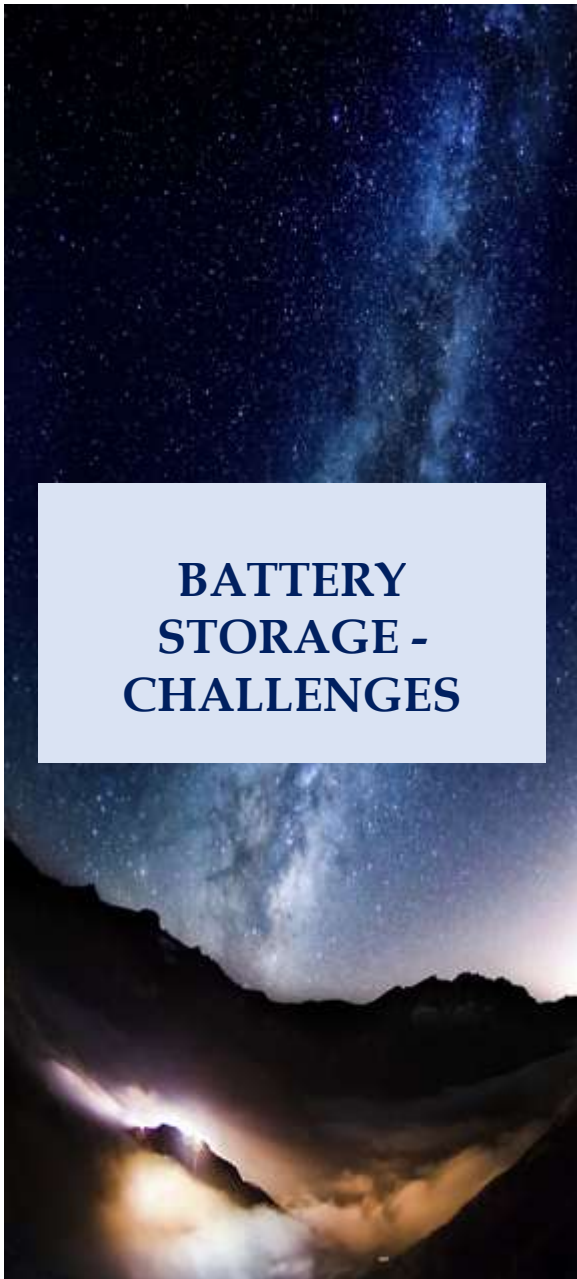
PPP Model Bid Documents issued by Niti Aayog allocating risk between Beneficiary & Government

MARCH 2022 – Bids approved for ACC Battery Storage manufacturing

Production facilities to be set up in 2 years

ACCs to cater to EV Market (apart from consumer electronics, solar rooftops, electric grids)

Cost of EVs are expected to come down (as EVs are relying on import of ACC batteries)



PLI scheme and Notification dated 9th June 2021 is “*technologically agnostic*”

Who decides which technology, cell chemistry to be used in battery manufacturing? Road map for the future?

NESM had stressed the need for International partnerships and alliances to secure access to key minerals “ in line with *battery technology and chemistry roadmap*”

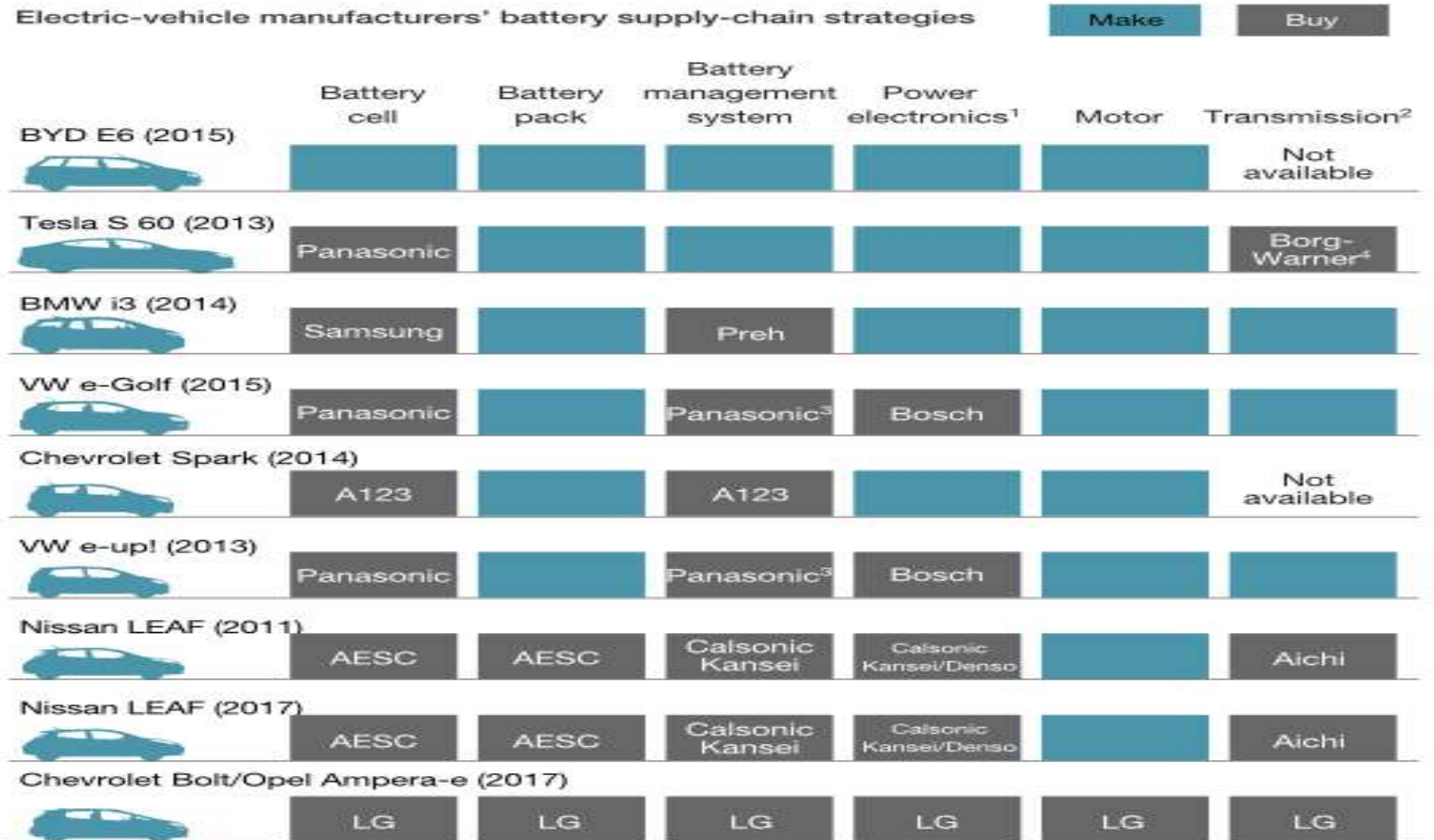
Is there clarity on the “battery technology” and “chemistry roadmap” in India?

India is not rich in reserves of minerals – lithium, aluminium, cobalt manganese, nickel, graphite, copper. Global demand is increasing

How are minerals proposed to be sourced on long term and “sustainable” basis? What kind of State support is expected? What partnerships & alliances are in place?

GLOBAL OEMS ADOPT DIFFERENT BATTERY SUPPLY CHAIN STRATEGIES I.E. THEY EITHER PROCURE OR MAKE - CELL, BATTERY PACK, BATTERY MANAGEMENT SYSTEM

BATTERY SUPPLY CHAIN STRATEGY



¹ DC-DC converter and AC-DC inverter.

² Only single-speed transmission.

³ Formerly Ficosa, now owned by Panasonic.

⁴ Formerly Eaton, now owned by BorgWarner.



**ROLE OF LAW &
POLICY**



CREATE AN ENABLING ENVIRONMENT FOR PSP



**CHANGE / ADAPT / MODIFY EXISTING LAWS TO ADDRESS
SECTORAL ISSUES**



BRING TRANSPARENCY & CLARITY ON STAKEHOLDER ISSUES



**CATALYZE MOBILIZATION & UTILIZATION OF RESOURCES IN AN
EFFICIENT MANNER**



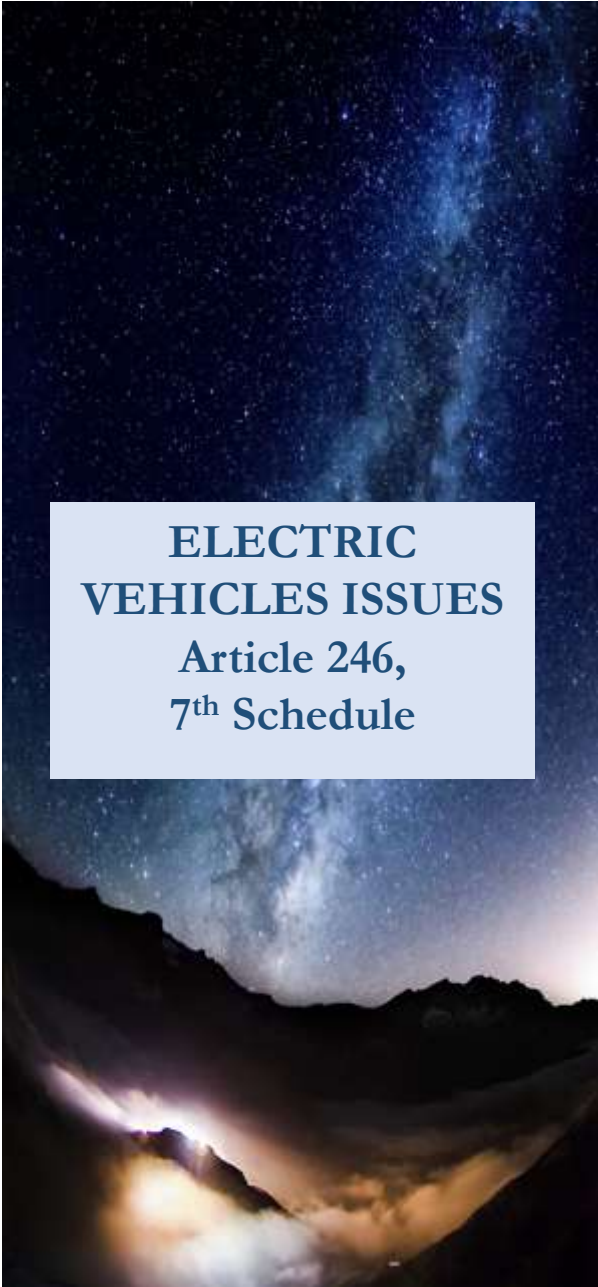
BALANCING INTEREST OF STAKEHOLDERS



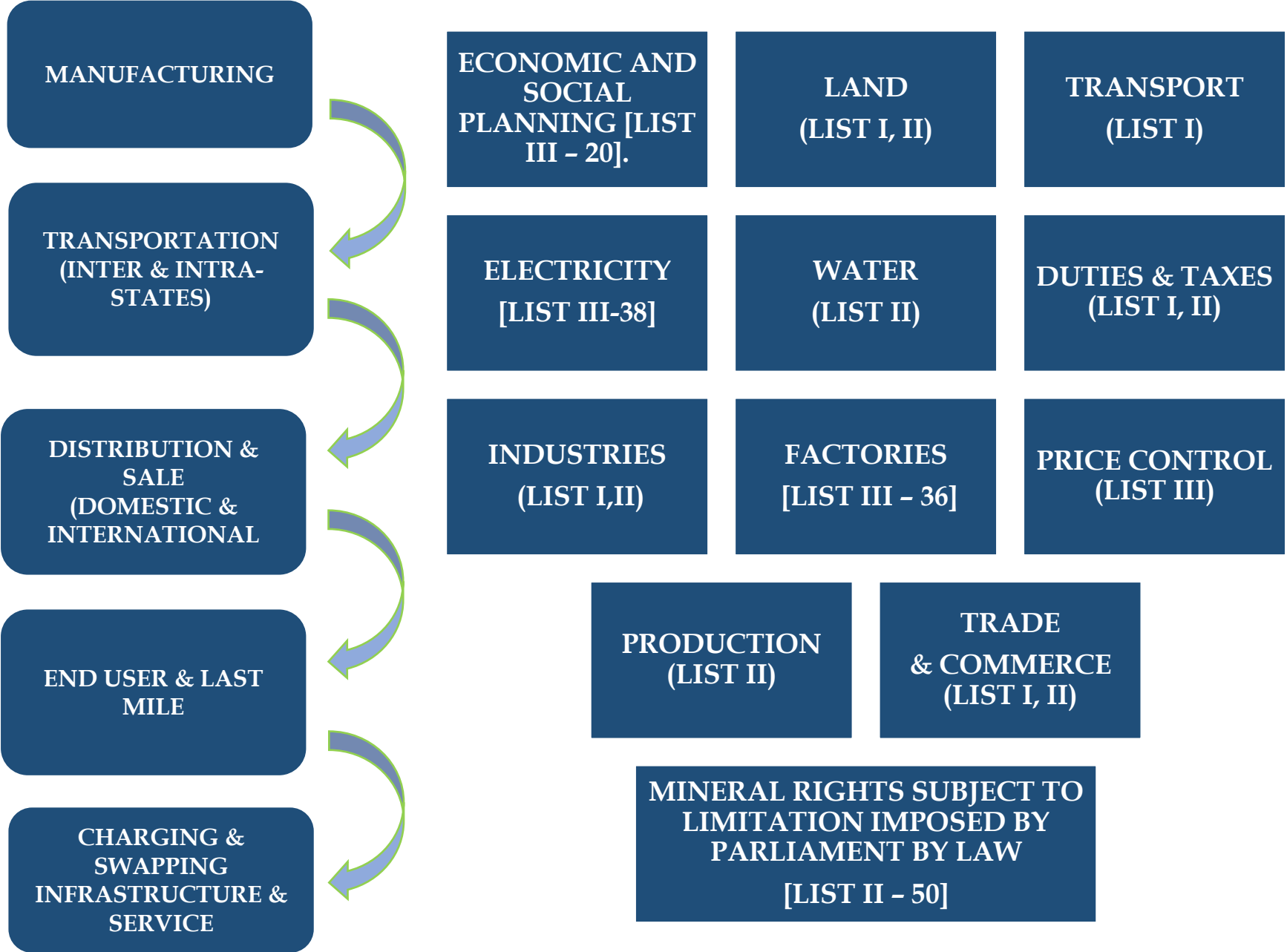
BUILD INSTITUTIONAL CAPACITY TO ADDRESS SECTORAL ISSUES

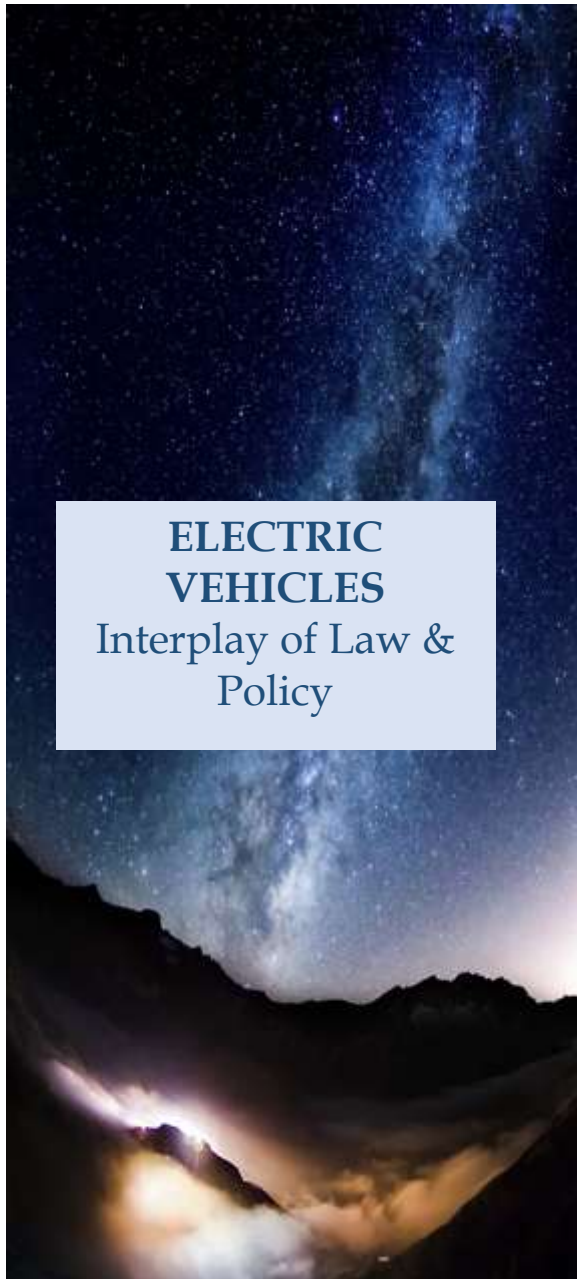


CREATING SUSTAINABLE ENVIORNMENT



ELECTRIC VEHICLES ISSUES
Article 246,
7th Schedule





ELECTRIC VEHICLES
Interplay of Law & Policy

LAND	IDENTIFICATION & ACQUISITION
	CONVERSION
BATTERY	BUY OR MANUFACTURE
	IDENTIFYING MINERALS
	LONG TERM SUPPLY
TRANSPORTATION	INTER -STATE ISSUES
	NEED FOR CONSENSUS ON TREATMENT
PRODUCTION	FDI POLICY CLARITY ON INVESTMENTS
MARKET	FIRM OFFTAKERS
	TRADING ... DOMESTIC & INTERNATIONAL
PRICING	INCENTIVES, TAX EXEMPTIONS
CHARGING	AVAILABILITY
	DISTRIBUTION NETWORKS & INFRASTRUCTURE UPGRADE
CONSUMPTION	RETAIL PRICE
	QUALITY & SAFETY STANDARDS

DOES THE CONTROL OF EV INDUSTRY BY CENTRE/UNION NEEDS TO BE DECLARED BY PARLIAMENT BY LAW TO BE EXPEDIENT IN PUBLIC INTEREST [LIST I- 53]

DOES REGULATION OF MINES AND MINERALS FOR EV INDUSTRY NEEDS TO BE DECLARED BY PARLIAMENT BY LAW TO BE EXPEDIENT IN PUBLIC INTEREST? (LIST I - 54)

THANKS

**PRABJOT SINGH BHULLAR,
ADVOCATE**